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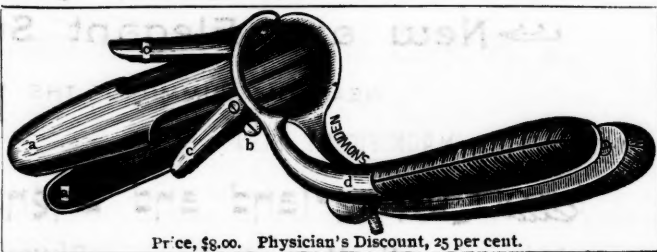
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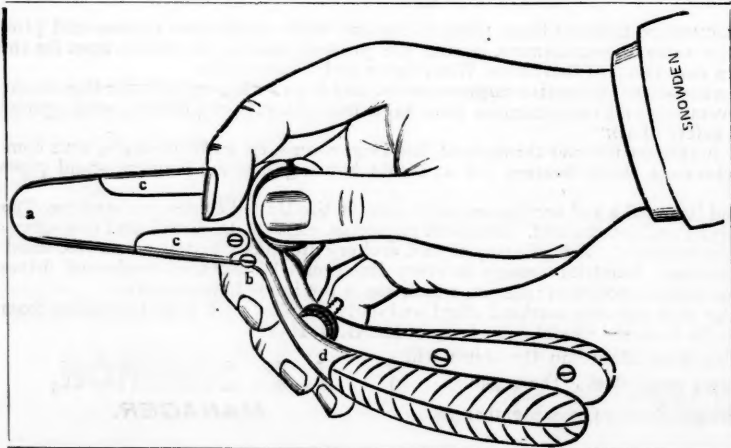
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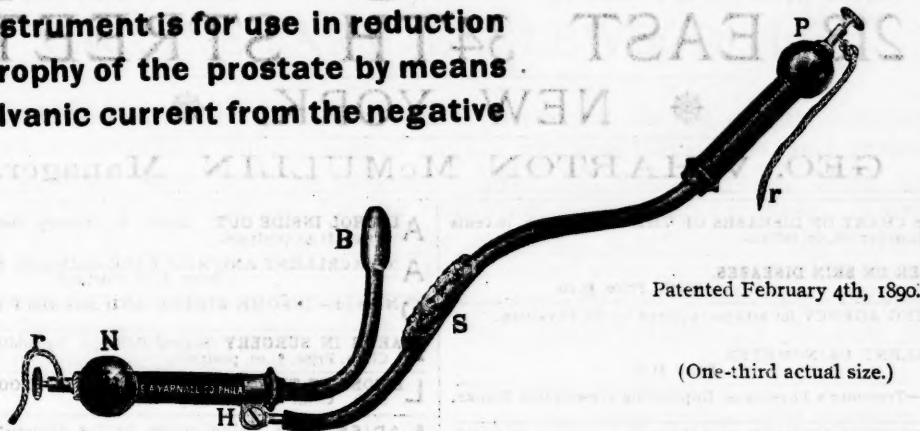
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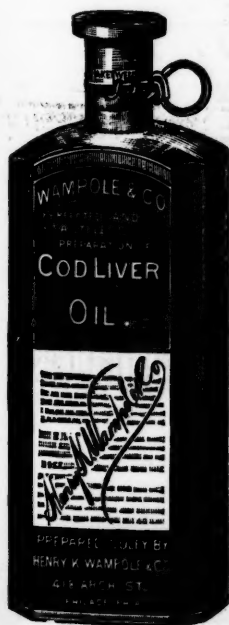
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THE SWILL AND FILTH DISEASES OF SWINE.

By FRANK S. BILLINGS.

Director Patho-Biological Laboratory, State University, Nebraska.

THE GERMAN SCHWEINE SEUCHE, NEITHER A PLAGUE NOR A SINGLE DISEASE, AS SHOWN BY GERMAN INVESTIGATIONS.

PERHAPS no more unfortunate and misleading researches, so far as they have influenced work of a similar kind in this country, have ever been made than those of Prof. Schütz, of Berlin, upon some swine diseases in Germany. The weakness of Schütz's work is its incompleteness, and, in many essential respects, unscientific character. As this work has been the real cause of the assumption of a second swine-plague in this country by the government, a totally unwarranted statement, I feel it my duty to place the evidence exactly as it stands, and as plainly and unbiased as I can, before the world. Hence, I will at once begin with the original German evidence, commencing with that of Loeffler, the discoverer of one of the germs in question, and the originator of the name *schweine-seuche*, who says:

"Of especial interest is an observation which I had occasion to make during the course of my investigation of the bacillary-Rothlauf (Rouget) upon a hog which died *presenting the phenomena of that disease.*"

"On October 26, 1882, a swine was sent to me from the swine-market at Rummelsberg, by Kreisthierarzt Eggeling (Professor at the Veterinary School), which he believed to have died from Rothlauf."

"Necroscopical notes: The cutis of the belly, the sexual organs and neck of livid-red color; enormous *adema of the skin of the neck extending between the anterior limbs and along the inferior portion of the abdomen*; pharynx reddened and swollen; mucosa

of larynx and trachea of an intensive dark-red color; no mentionable changes in the lungs; in the right lung some parts were dark-red, and contained but little air; nothing especial in heart; clouded swelling in liver and kidneys; mucosa of stomach intensely red, as well as that of the anterior portion of the duodenum; no other changes present in the intestines; mesenterial glands not enlarged; spleen somewhat swollen; dense and dark-blue red in color; the organs were still warm."

Cultures were made from different parts and organs in which there developed, "small ovoid bacteria, reminding one somewhat of the organism of rabbit-septicæmia, especially such as were in the process of fission, but were still to be extinguished from them by their not being half as large."

Inoculations with pure cultures were made upon various animals, one of which only is quoted, because they all give the only striking lesion mentioned in the original hog, and also because Loeffler looks upon it as the pathognomonic lesion.

"Guinea-pigs: *The necroscopical results were identical in all, hemorrhagic-serous infiltration of the subcutaneous tissues of the entire abdomen, extending to the axillary regions anteriorly, and to the inguinal region posteriorly, the muscles being infiltrated by the same reddish adema.*"

It is unnecessary to transcribe the results of any more of Loeffler's experimental inoculations with pure cultures, as they were all exactly identical, the one striking lesion being this enormous and extensive *adema in all directions from the locus inoculationis*, and I will say here, as it will be necessary to repeat quite often, that it is especially desirable that the reader should bear in mind that the one striking lesion observed by Loeffler, both in the original hog and every one of his experimentally inoculated animals, was this "enormous and extensive *adema.*"

Loeffler, himself, resumes on his results as follows: "From the transcribed observations it is to be seen

that the bacteria found in the fresh organs of a hog, said to have died from Rothlauf, differ essentially from the fine bacilli found in the latter disease, both morphologically and in their development in cultures, and also in their pathogenic deportment in the different small experiment animals, as well as in swine. . . . By the predominant interest from a national-economic point of view which these diseases of swine assume, it is very necessary that extensive bacteriological investigations should be made in order to ascertain if the bacteria observed by me in a single case give rise to enzoötics among swine; or, in other words, if we are justified from these results, in considering this etiological moment in differentiating a certain group of diseases from the specific Rothlauf under the name of schweine-seuche, or swine-septicæmia. . . . *The typical hemorrhagic serous infiltration of the subcutaneous tissues and a similar complication of the muscles immediately contiguous is so characteristic for the bacteria discovered by me that the identification of the disease should not be bound with any particular difficulty.*

"THE SCHWEINE-SEUCHE."

Schütz opens up his remarks upon the disease of swine, to which the name "Schweine-seuche" has been given as follows: "Herr Stabsarzt Loeffler has used the names Rothlauf and Schweine-seuche in the sense that the former name shall be used to distinguish the disease caused by the fine bacilli, and the latter, in which he discovered the other bacteria as 'Schweine-seuche.' I shall retain the same differentiation in my own remarks. . . . With regard to the Schweine-seuche we have at present no detailed communications, and I therefore hold it my especial duty to give my attention to this question."

Although it will burden the reader with a mere repetition of Loeffler's descriptions, still the questions I shall bring up are of such vast importance in clearing up the unfortunate complications and misunderstandings which have resulted from the German investigations, and in order to show that Schütz should have fully comprehended the meaning of Loeffler's communication, but neglected to or was incapable of doing so, I will now quote the same words again from Schütz: "Loeffler says, that on October 22d, 1882, he received from Dr. Eggeling a swine, which, according to the latter, had just perished from Rothlauf. The skin of the neck, and between the forelegs, and along the abdomen was livid red in color; *enormous œdema of the skin of the neck extending between the forelegs posteriorly; pharynx red and swollen; lungs little changed, a few dark-red spots in the right lung, which contained but little air.*" It will be remembered that Loeffler suggested that this disease should be termed "schewine-seuche," or "swine-septicæmia," and it is necessary to quote a passage from Schütz on this very point.

Schütz says: "I shall consider this conclusion (of Loeffler's) at the end of my work, but wish now to say, that it gave a false direction to my investigations, and that owing to the exact consideration of *an exceedingly profuse amount of material (!)* I have quite other conclusions as to the seat of the disease." One of the first things in importance in considering this question before us, is to know whether or not the so called practical German veterinarians, the men who come in daily contact with animal diseases in the fields and stable had any certain ideas as to different diseases in swine in Germany, and what those ideas were. Among such practical men, the before-mentioned Dr. Eggeling enjoys and deserves a very high reputation, and as he is quoted

upon this subject by Schütz, we cannot do better than to introduce his remarks here: "Eggeling says, that the schweine-seuche is the most frequent and dangerous disease of swine, and has been heretofore classed as identical with Rothlauf. In many districts it occurs nearly every year and causes no inconsiderable losses. It develops very rapidly, the swine appearing to be suddenly taken sick, and in a very few hours look as if stricken down; they lie constantly, and only rise with difficulty and unwillingly, are very weak and display much uncertainty in their movements; the appetite is completely lost, though the sick swine occasionally drink a little; sometimes the animals vomit, and most of them are decidedly constipated. After being ill about twelve hours, a redness of the skin begins to appear in the inferior abdominal regions, especially around the umbilicus and preputium, extending between the hind legs and anteriorly to the neck. *This redness is darker than that accompanying Rothlauf, and gradually extends over the whole body. Swelling of the skin and difficulty of respiration is wanting. The disease terminates in twenty-four to forty-eight hours.*

"Necroscopical examination shows the most pregnant abnormality to be severe inflammation of the stomach, the mucosa of which is of an intensely red color along the greater curvature, much swollen and covered with mucous; the epithelium is wanting in spots; remnants of food are often attached to such places; the inflammation often extends along the duodenum, and occasionally into the large intestine; the mesenteric glands are always swollen, liver often full of blood, or, at other times, dry and friable; spleen sometimes swollen; kidneys full of blood, sometimes inflamed; *lungs, as a rule, healthy; heart clouded, dry, and friable; muscles anæmic.*

"From these phenomena this disease of swine is a blood-poisoning, extending from the digestive apparatus, a septicæmia."

Schütz does not accept the above to be a correct description of the "schweine-seuche," but thinks it to be more properly that of Rothlauf, and we can at once notice that the lesion claimed so strongly by Loeffler, "enormous œdema," is not mentioned by Eggeling at all, but another equally important fact to be noticed, is that the latter says: "*The respiratory organs are, as a rule, healthy.*"

We now come to the results of Schütz's first series of examinations and experiments, and desire to call the attention of American and other investigators to the insignificant amount of material at Schütz's command, and also to the absolute absurdity of proclaiming the existence of a "seuche" (pest) upon the examination of a number of hogs, which would scarcely count at all in the study of our American swine-plague. Again, the reader will notice that we have no clinical history whatever as regards this first lot of hogs examined by Schütz, who says:

"In order to close up my experimental investigations of Rothlauf, I had requested quite a number of veterinarians and large agriculturists to send me the organs of swine that died presenting the phenomena of this disease. This request was most cheerfully complied with, and, in a short time, I was provided with a sufficient amount of material to continue my investigations, as well as to study the cause and nature of schweine-seuche."

"June 15, 1885, there was sent to me the stomachs, spleens, and livers of three hogs that had supposedly perished from Rothlauf after being ill but a short time. *I will not give any description of the abnormal condition of these organs as they were partially foul on arrival.*"

The above is sufficient for our purpose so far as that material goes; it is enough to say that Schütz asserts that he found the same bacillus in small animals inoculated from those organs, and derived pure cultures of the same as that described by Loeffler.

From the organs above mentioned, two mice, one rabbit, one pigeon, and two guinea-pigs were inoculated with small fragments pushed under the skin in pockets made instrumentally. The guinea-pigs and pigeon were not effected. The rabbit alone interests us, and that only as regards "enormous oedema." On the next day after inoculation in the ear that organ was swollen and pendulant, this swelling soon extended along the head and neck; on death the necroscopy revealed infiltration of the skin of the inoculated ear, the head and neck with a clouded fluid. *Not an enormous hemorrhagic infiltration* which Loeffler claimed to be typical for the disease studied by him!

With pure culture made from the above animals (that died) there were inoculated two mice, one rabbit, and a pigeon; the latter was not ill, the others died. Of the rabbit it is said "*infiltration of the subcutis of the right ear and right side of the head with a clouded reddish fluid*," which was not so striking in character as to lead Schütz to look upon it as "enormous oedema." Although he does admit that they died of a septicæmic disease. With pure cultures obtained from these animals in bouillon, *two five months old pigs were inoculated with 2 ccms. each in the inside of the flank of the left hind leg on June 26, at 5 P. M.* On the next day there was a marked swelling of the inner surface of both hind legs which was limited to the posterior portion of the abdomen in one hog, while in the other it reached somewhat further forward. (Loeffler also inoculated one pig, which I purposely did not refer to in quoting from him, of which he says "skin of abdomen blue-red color. *Enormous oedema of the skin.*") The skin was of a bluish-red color. The first of Schütz's inoculated pigs died in twenty-four hours post inoculation: "inner surface of both posterior limbs and the posterior-inferior portion of the abdomen somewhat swollen; in the middle of the swollen parts was a circumscribed blue red spot, the surrounding tissues being of a diffuse bluish-red color; at these points the subcutis and underlying muscles were infiltrated with a clouded red fluid; the skin tough and thickened." . . . The only other lesion interesting us in this examination is that of the lungs "*the inferior portion of the posterior lobe of both lungs being of a bluish-red color and somewhat dense in character; the remaining portions of both lungs of a red rose color.*"

The second pig died on the next day at 5 P. M., *forty-eight hours* after inoculation. "Posterior limbs swollen considerably which condition extended to the root of the tail, and inferiorly along the abdomen to the second pair of teats; on the swollen parts was to be seen a sharply circumscribed bluish red spot of considerable extent, which was beneath the level of the surrounding tissue; subcutis and muscles of this swollen portion of the body infiltrated by a redish fluid which was decidedly hemorrhagic in character in the blue-red places. . . . Lungs in a condition of expiration and but little distended by air. In the posterior portion of both inferior lobes were some small hemorrhagic centers which extended above the cut surface; the tissue otherwise of a diffuse reddish color and oedematous." Another hog was inoculated with 1 ccm. of a bouillon culture on July 14, and died on the night of the 16th, about thirty-six hours; the inferior portion of the abdomen was some-

what densely swollen from the enseniform cartilage to the perineal region, and of an intense bluish-red color, both posterior limbs in the same condition; petechial spots in different parts of the body; a bluish-red infiltration of subcutaneous tissues and muscles of swollen parts; *lungs in a condition of expiration and of a dirty light-red color, cut surface smooth and oedematous.*

So far as Schütz's first series of experiments go this closes the testimony, and it now behooves us to see to what conclusions they led him. He says:

"The previous inoculation experiments in swine show that the bacteria found in the spleen are capable of making swine ill and causing their death. The anatomical picture presented by the inoculated swine demonstrate that the bacteria primarily exert their influence at the locus inoculationis, where they multiply, and are then distributed over the infected organism by means of the blood-vessel and lymphatics. *The inoculated disease departs itself in swine, that is, presents the same phenomena as in rabbits.* If it be remembered that Loeffler discovered an organism in the blood and tissue of a hog which morphologically corresponds with that found by me (Schütz); that this organism (as far as Loeffler's descriptions permit of a conclusion) develops in the same way as that found by me, and that the hog abducted by Loeffler presented almost the same phenomena as those inoculated with my cultures and which perished from the effects thereof; that the Loeffler organism effects mice and rabbits in the same manner, *therefore the conclusion is justified that the disease (in swine) observed by each of us is identical, and caused by the same bacteria.*"

The following points the reader will please bear in mind:

1. While Schütz speaks of a marked oedema, Loeffler always mentions an "enormous oedema."
2. That Schütz asserts that the results of the inoculations in swine with pure cultures were the same as those observed in rabbits and small animals, of which he had said, "Aus den vorstehenden versuchen ergibt sich, dass mäuse und kaninchen mit kleinen stückchen der schweinmilz geimft wurden, septicæmisch erkrankten und starben," *acquired septicæmia and died.*
3. That the course of the disease in the two pigs (five months old) inoculated with 2 ccms. of a pure bouillon culture, under the skin of the inside of the flank, was *twenty-four and forty-eight hours respectively, while the third hog revived but 1 ccm. and died in thirty-six hours.*
4. That while but two pigeons were tested, still that they were not ill at all, even though the virus had such malignity in small animals, as well as hogs, in comparatively small doses.
5. That no pulmonary lesions other than commonly occur in any case of per-acute septicæmia is noted in either Loeffler's original or inoculated hog, or the three experimentally inoculated hogs of Schütz.
6. That in neither case have we an iota of clinical history regarding the original hogs from which the primary cultures were obtained.
- 7th, and most important of all, that from the location of the Veterinary School and the Laboratory of the Imperial Board of Health, in which Schütz at the time was hülfs arbeiter (assistant-worker), it is self-evident that Schütz must have had, or could have had, access to Loeffler's cultures, and yet either neglected to take advantage of it, or fails to mention the fact, and that under such circumstances he was in duty bound to have made comparative investigations, morphological, cul-

tural, and inoculative-experimental, in swine; and that, in neglecting to do so, or to mention the fact, his work may be justly said to have been, and is, unscientific, and his conclusions open to the most serious question.

8. Loeffler did not inoculate pigeons, so that Schütz's negative results in two of those birds are absolutely without value in comparing them with Loeffler's in other animals.

9. The evidence given by Schütz is not of that unequivocally positive and conformitory character to warrant the assertion that the hogs studied by him died of the same disease as that studied by Loeffler, no matter if the germs in each case were alike morphologically and in cultures.

SCHÜTZ SECOND SERIES OF EXPERIMENTS.

"August 27, 1885, while Schütz was away on a vacation, there were sent to the Pathological Institute of the Berlin Veterinary School several stomachs and spleens from swine that were reported to have died from a disease resembling *Rothlauf*. The same were examined by Dr. Lüpke, Schütz's assistant and now professor in Stuttgart, and an oval bacterium found therein, of which Schütz says, on his return, "there were in the cultures the same bacteria with which he had previously become acquainted." In this case we fortunately have some history which, as will be shown, is of the utmost etiological importance, though entirely unappreciated and neglected by Schütz, as well as those who have followed in his footsteps in this country.

The forwarder of the specimens was "Herr Kollege Hirschel zu Putlitz," that is, a local veterinary practitioner, who gives the following history both as regards the place where the swine were kept, the feed, and the clinical phenomena noticed in the diseased swine.

The swine were kept at a dairy, and fed upon the refuse of the same, that is *dairy swill*, or, as reported, "the food of the swine consisted only of whey ('Molken') and skim-milk, and was quite acid. The large basin was but seldom emptied, so that old remnants of the food remained there for weeks, as well as in the conducting tubes.

"The first swine put into this place were taken from an older place of the same kind belonging to the same owner, and had been fed with the same kind of food. The owner then bought other hogs, and put them with those first introduced, immediately after which some showed indications of '*Rothlauf*,' and died therefrom. The pens were then cleaned, disinfected, and whitewashed, notwithstanding which they continued to become ill and died. Only occasionally were symptoms of *Rothlauf* apparent. The clinical phenomena were in general as follows:

"After the newly-purchased animals had been in the pens three or four days, and fed with the above feed from the main reservoir, diarrhoea appeared, the excrement being of a yellowish-green color, and in seldom cases hemorrhagic; at the same time the afflicted hogs appeared stiff in their limbs, with disinclination to move; appetite poor. About the sixth or seventh day they showed symptoms of weakness in the lumbar region, so that they tumbled or swayed here and there in their movements; most of them remained lying down the whole time, occasionally moving in a weak manner to the food-trough, where they often fell over from weakness. At this time the ears of some of the animals were red, as in *Rothlauf*, and all presented the symptoms of rapid and labored respiration; tremblings and convulsions were ob-

served in some of most severely prostrated animals. The disease terminated in eight or ten days."

This clinical history would pass equally well for hundreds of cases of the American swine-plague, and with Roloff's observations in my mind, and Schütz's conclusion that the lesions in the intestines, described by Roloff, most probably belong to *schweine-seuche*, whereas it is an almost absolute certainty that they belong to the regular swine-plague, led me to that opinion. An idea I do not now think correct, though I still more obstinately assert that there is no evidence showing that this disease (Hirschel's) had any relation at all to the one described by Loeffler, and also by Schütz in his first cases.

To continue with Schütz's observations and experiments upon this second lot of hogs: "It became evident to me," he says, "that the clinical history did not correspond either with the description of *Rothlauf* or *schweine-seuche* as given by Eggeling, and I must admit that I am still unable to explain away the contradictions."

"Necroscopical Notes of Swine, No. 1, from Putlitz, November 19, 1885. Outside of stomach gray-red, intestines bluish-red, veins of serosa, and subserous tissues engorged with blood, contents of the small intestines fluid, that of large intestine pulsatous, the stomach contained a small quantity of cut up beets and some fluid strongly tainted with gall; the mucosa of the regio *oesophagea* swollen and gathered in deep rugæ, the greater part being deeply saturated with gall; the edge of the same bordering upon the lesser curvature was marked by two brownish-yellow spots of the size of a bean, which lay deeper than the surrounding tissue; these spots were sharply circumscribed, clouded and dry, their edges being but loosely attached to the surrounding and underlying tissues; the glandular mucosa of the stomach was gathered in numerous folds, and clouded the combs of the rugæ, being more or less gall-stained, while the spaces between them had an uneven surface, and were of a grayish-yellow color. In the place of the lymph-follicles small excavations were to be seen, having smooth, flat edges and a bluish base. The mucosa of the duodenum and the anterior portion of the jejunum somewhat swollen, some few of the smaller vessels being partially engorged; posteriorly, the mucosa was less swollen and pale; no changes in the Peyer's plaques or solitary follicles; mucosa of cæcum and colon clouded, bluish-gray in color, tending towards a green shade; mesenteric lymph-glands firm, of a bluish-gray color, and only moderately swollen; spleen but slightly swollen; liver swollen some, bluish-brown in color, firm, edges somewhat rounded; acini distended, their center portion being of a dark-brown color, while the peripherics were clouded and gray-brown; gall-bladder partially filled with a thickish, clouded gall. Kidneys not much swollen, gray-brown in color, surface smooth and refracting, medullary portion yellowish-red in color, while the cortical substance was gray-brown, slightly clouded, and marked by numerous engorged vessels. The pericardiac sack contained 36 grammes of a clouded red fluid. Peri and epicardium coherent, which, when separated, showed the connection to be made up of an elastic tissue, the separated surfaces being dull and rough; myocordium of a greenish-brown color, somewhat clouded, but firm; cut surface dull. The lungs were large; both lobes of the left lung, with the exception of the superior edges, and the four lobes of the right lung dense and airless—hepatized; in both pleural sacks 64 grammes of a clouded, reddish yellow fluid mixed with flocculent

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fibrin; the plural covering over hepatized portions was rough, lusterless and clouded, while the latter were of a general dark-red color, with grayish-yellow and red centers scattered through them, and varying in dimensions; the superior edges of both lobes of the left lung felt soft, although they did not contain much air; the cut surface of the hepatized portions were greenish-red and reddish yellow in places, these latter being sharply outlined from one another, they corresponded to the circumscribed spots in the pleuræ, were very friable and but little lustrous, somewhat granulated, and occupied large sections, or were scattered in centers throughout the grayish-red substance; their limits corresponded to the course of the larger bronchi and vessels; the surface of the grayish-red parts was also granulated, non-lustrous and clouded; the interlobular tissue was infiltrated with a clouded reddish fluid; the pleuræ of the non-solidified portions of the lungs was smooth and transparent; bronchiæ-lymph glands swollen and dense, capsule reddened; parenchyma reddish gray, and swollen."

The second swine from Putlitz presented exactly the same phenomena. Of these cases Schütz says: "*Diese Fälle bieten viel Bemerkenwerthes dar.*" These cases present much that is worthy of consideration, both swine suffered from an acute inflammation of the pleuræ and the lungs, and in hog No. 1 the inflammatory processes had extended to the pericardium. Then follows an exact description of the lesions in the lungs, and a critical consideration of the same, to which is appended this conclusion, which is of the utmost importance:

"On this pneumonia follows the phenomena of a general infection, which results partially by way of the lymphatics, and in part via the blood circulation; for the first speaks of the severe complication of the adjoining lymphatics, and for the infection of the blood the parenchymatous changes in the liver, kidneys, spleen and heart, and the irritation of the stomach and intestines."

Schütz then made a very detailed and exact bacteriological examination of the lungs of these two hogs, and says:

"In the lungs of both swine exactly the same results were ascertained; the bacteria being the same as those already found in the spleen, and in such numbers that the changes observed in the lungs must be attributed to them. I came, therefore, to the conclusion that the bacteria were taken up by the expiratory passages, and aspired into the finest bronchioles, and thus caused the pneumonia." . . . "The results of this laborious investigation was that the lungs contained the greater number of bacteria, the bronchial glands approximately the same, while the other organs contained proportionally few, which all speak for the primary invasion of the lungs."

"Although the bacteria found in the lungs of both swine corresponded in form to those discovered in the spleen (first examined), still that is not sufficient evidence to demonstrate the identity of the germs found in each case. *We also know that correspondence in methods of growth in cultures is not even sufficient to justify the conclusion that two germs are necessarily identical.*"

Cultures were then made from the freshest lesions in the lungs, and a number of small animals also inoculated with pieces of lung substance, viz.:

Six mice under the skin of the back.

Five guinea-pigs in belly.

Two rabbits in ear.

Two rats in abdomen.

Two pigeons and one hen in breast.

Several things are noticeable in considering the results of these inoculations:

1. While swelling at the point of inoculation is mentioned, no mention is made of "enormous œdema," which, if present, should have been so striking as to call immediate attention to it, if we can judge by Loeffler's experience.

2. Only three of the guinea-pigs died.

3. One pigeon died. (The hen did not.)

TWO MORE HOGS FROM PUTLITZ.

"On the 13th of December, 1885, Schütz received two complete cadavers from Herr Dr. Hirschel, of which one was a young hog; the other aged. (The outbreak had now continued over a month!)

"Necroscopical notes of the pig: The skin of the points of the ears and around the nasal openings and mouth, and the inferior portion of the abdomen and vicinity of the sexual organs, of a dark-blue color; on section, one only saw engorged vessels, out of which flowed fluid blood; at some spots, where the skin was very red, the skin and subcutis were infiltrated with a red fluid." (No mention of anything corresponding to Loeffler's "Enorm œdem," of which we read, "the skin of the abdomen, sexual organs, and along the neck livid red; enormous œdema of the skin of the neck and between the forelegs, extending along the abdomen.") The only other thing that interests us is the presence of pneumonia but no intestinal lesions, otherwise the same as the first pig. Schütz says, "as cause of death must be considered the multiple mortifying pneumonia, which caused the pleuritis and general infection."

"The previously detailed investigations demonstrate with certainty that a pneumonia of an infectious nature is caused in swine by bacteria which are identical with the oval bacteria. This disease has not only a scientific interest, but also highly economical importance, and I will not neglect to say that the veterinarians assert that about two hundred swine perished from this disease during the previous year, and that Dr. Hirschel asserts its general appearance among the swine of his district. This disease particularly attacks young swine, and most perish. Dr. Hirschel, to whom I sent the results of my observations, says that they correspond with his."

Schütz then quotes Loeffler's assertions as to the disease observed by him being a septicæmia in swine, or schweine-seuche, and says, "It is now proven that the disease caused by the oval bacteria, and named schweine-seuche, has no connection with Rothlauf, and is not a septicæmia in the true sense, but an infectious pneumonia. Hereby falls the assumption in the selection of the name as to whether the disease should be distinguished as 'schweine-seuche' or 'schweine-septicæmia.' Nevertheless, I prefer to retain the name 'schweine-seuche' for the disease in question, for, as will be shown later on, it has not been positively demonstrated that the lungs are the only atrium by which the germs enter the body."

"If the above-mentioned hypothesis is correct, that the germs enter the body via the respiratory tract, and there multiply and cause the mortifying pneumonia, then the artificial introduction of pure cultures into the lungs of healthy hogs must produce the same disease."

This was done on the 16th of January, at 1 P.M., a healthy hog receiving 1 ccm. of a bouillon culture in each lung. The animal died on the night of the 18th-19th of January. No cutaneous œdema. Consolidated centers with pleuritis reported in lungs.

The same bacteria found in tissues.

An inhalation experiment was next made with dried portions of the lungs of the above swine, rubbed up into a fine powder, the virulence having first been tested in two mice by the subcutaneous introduction of the same. This failed to infect a pig when his cage was filled with the powder blown into it. A bouillon culture was then sprayed into a cage containing another hog. This worked—killing in eight days; pneumonia resulting. *No œdema of cutis*. The second swine sent from Putlitz was also examined, and gave the lesions of a chronic, caseous destructive type in the lungs, often seen in prolonged cases of our American swine plague, and which are by no means necessarily due to infection by way of the respiratory passages, the same bacteria being found therein and in other parts of the body.

Here comes an interesting passage:

"Regarding the course of the Seuche in the possession of the dairy-owners, I will mention that with the beginning of cold weather no further cases occur, and Dr. Hirschel has communicated to me that the Seuche regularly comes to an end in winter, to develop again in warm weather."

"Hereby, we now know the cause of two generally extended diseases of swine, the Rothlauf and the schweine-seuche. The Rothlauf shows the properties of a septicæmia, the schweine seuche on the contrary presents lesions very much resembling those of tuberculosis. At this moment the stages of the schweine-seuche have not been so exactly followed out that we can speak positively over all the properties of the same, and it requires a much more detailed investigation of individual cases. At present, I believe that the lungs of swine, as in tuberculosis, to be the general point of attack of the inficiens, and that from them the germs are dispersed over the body. This does not exclude the possibility of their gaining entrance some other way, as shown by the results of subcutaneous inoculations (in the first lot B). To the infection from wounds I would trace the infection in the case quoted by Lœffler, which was marked by enormous œdema. On the contrary, I am unable to bring the statements of Eggeling into conformity with my observations and experiments."

"I have previously mentioned that the picture which Eggeling gives for the Rothlauf bears a certain resemblance to that presented by the hog examined by Lœffler on October 26, 1882, for Eggeling says, that the skin under the neck is often swollen and painful, and markedly infiltrated with serum. It is singularly that Eggeling should describe these symptoms as characteristic for a pest-like disease among swine, and only speak of the lungs as œdematous. It must therefore be said that the disease described by Eggeling is not the one which must now be considered as schweine-seuche. On the contrary, I think it possible that it should be classed with the Rothlauf, which can only be decided by examining the blood and organs for the peculiar bacillus of that disease."

"An infection from the intestinal tract may be also possible. The results of feeding the blood and flesh of a schweine-seuche diseased swine, which were negative, does not speak against this possibility, for it is possible that the repetition of this experiment might lead to positive results. At this time, I desire only to call attention to a disease of swine described by Roloff as caseous enteritis, which he looked upon as tuberculosis, which, however, most probably should be classed with the disease process caused by the oval bacteria. He must not leave it out of consideration that the intestinal wall can be infected from the circulation, and as a consequence the caseous

condition of the intestines need not necessarily be attributed to bacterial pollution of the intestinal contents."

This last statement of Schütz has led to a very large amount of misconception as to what his "schweine-seuche" should be considered to be. It at first led me to think it was our swine-plague, a position I flatly contradicted in my full report upon the swine-plague of this country, though no less an authority than Prof. Welsh, of Johns Hopkins University, has said that I have introduced much confusion into the question by asserting the schweine-seuche to be identical with our swine-plague, an assertion which I flatly deny. When asked for proof Prof. Welsh refers me to "page 52 of my book on swine-plague, line eight from the bottom" where I do say "by the discovery of apparently the same germ as Schütz described," and again Welsh refers me to page 72, nine lines from the bottom where I say "and the germ first described by Schütz which I was the first to claim apparent microscopic identity for one found in the swine disease of this State" (Nebraska). The reader will see that I went no farther than asserting "apparent microscopic identity, a most dangerous thing to do if based on bacterial descriptions alone, between the germs described by Schütz and my own, but I most emphatically demonstrated the germs not to be identical by actual experimental inoculations in rabbits by the absence of œdema following the introduction of pure cultures. In my report on page 190, I ask the question "Is this schweine-seuche identical with the American, English, and Danish swine-plague?" To which I answer to my mind we shall find that the evidence given by Lœffler is most decidedly negative as regards the American plague, while that of Schütz tends partially in one direction and partially to the other, "referring to Roloff's cases. On page 196, respecting my inoculations in rabbits, purposely made to test this question, "no œdema present," and on page 198 I say:

"Now, why not swine-plague as we understand the term?"

"1. Because enormous œdema never occurs in that disease.

"2. Because the tendency to hemorrhagic effusion is not a constant phenomena in swine-plague.

"3. Because the intestinal lesions seem to be entirely wanting in schweine-seuche."

"Hence it seems as if our conclusion is correct that the organism discovered in swine by Lœffler, and the disease resulting therefrom has no authoritative bearing whatever upon the origin and nature of the cosmopolitan swine-plague."

My final conclusions, which I would only change in one particular were:

"These three German pests are:

"1. Rouget, Rothlauf, or erysipelas according to the literature.

"2. Wild-seuche. Lœffler's schweine-seuche and perhaps Schütz's first series.

"3. Swine-plague proper, which as far as the literature is concerned is made up of Schütz's pneumonia and Roloff's caseous enteritis."

Here I would change my opinion, and not include Schütz's "infectious pneumonia," but have that as an independent local, swill or filth infection and not a seuche or pest in any sense of the word. It is singular that while Prof. Welsh is so anxious to blame me with bringing confusion into this question, that the best German reviewers of my work have pointed out the fact most distinctly and with truth, that I positively denied the identity of the two dis-

eases, and that Welsh should pick out two brief remarks as to "apparent identity" between germs which, as Schütz says, amounts to nothing conclusive, and utterly neglect to notice the tenor of page on page of my book in which I most positively take quite the contrary position. However, the honesty, and impartiality of most American investigators or writers towards my work is as fully known as their biased partiality toward that issued by the government, which, thankfully for the welfare of the American swine interest, has been shown to be untrustworthy and not fulfilling the demands of most exact scientific investigation.

But it is with Schütz's work and conclusion we have to do at present, and to get as near the truth as we can regarding the swine disease in Germany, and as he has intimated that the lesions described by Roloff as "caseous enteritis" should be included in his *seuche*, it is now essential that Roloff's description be offered to the consideration of our readers, which I copy exactly as translated in my work on swine-plague, page 211.

"SCROFULOUS CASEOUS-ENTERITIS."

"This chronic enteritis, or inflammation of the intestines, makes itself manifest in the young swine which have been perfectly well since their birth gradually begin to emaciate, the skin becomes pale and uncleanly and the appetite diminishes. To these phenomena diarrhoea sets in, being at first moderate, but gradually increasing in intensity; the discharges are very offensive. The animals become emaciated, the back arched and back-bone prominent, flanks fallen in, abdomen tucked up in its posterior parts, but pendulous in its lower portions, though not so much so as when ascites is present. The appetite for solid food disappears, while thirst increases. In cases where the diarrhoea is violent, death results in the course of a few days."

The pathological changes, described by Roloff, in the large intestines are what directly interest us, as so far as known they have never been seen in any other disease than the genuine swine-plague. They are:

"The large intestines form a thick, dense pocket, the single convolutions being united together as a conglomerate mass, the surface showing the regular markings of the individual folds more or less distinctly. Upon the surface of the individual convolutes are to be seen flat protuberances, some of which are roundish, while others are quite oval, varying in size from a five-cent piece to a quarter of a dollar. These neoplasms are surrounded by a slight ring of indurated tissue. Upon these protuberances are also to be seen still smaller vesicular projections, varying in size from that of the head of a pin to that of a pea, or numerous small clouded points. Between the convolutions may be seen the swollen lymph glands, which present an uneven surface to the eye of the observer. The external surface of the intestines shows, on many convolutions, large brownish spots, in which may be seen many small vessels which are distended in places along their course and marked by numerous extravasations. Other portions of the serosa presents centers of diffuse redness, while others have a yellowish shade, the balance being quite pale. The serosa retains its normal lustre upon the slightly-red and pale portions, but is clouded over the brown-red spots."

"By means of touch it is very easy to see that the increase in volume of the intestines is caused by a thickening of its walls, which at the same time gives

them a certain degree of inelasticity. These conditions are most marked in the reddened portions; the secondary, flattish, protuberances feel dense, while the vesicles upon them fluctuate on pressure. The individual convolutions may be easily separated as the mesentery uniting them is very friable. Between the convolutions, in the markedly hyperæmia connective tissue, are to be found the hypertrophied lymph-glands, many of which have a medullary character, while others have undergone caseation."

"The contents of the large intestine is, in general, represented by a small quantity of evil-smelling pul-taceous or fluid material which is mixed with other of firmer consistency, and is of a dirty greenish or brownish color."

"The ileo cæcal valve projects into the lumen of the cæcum as a long, dense, cylindrical body, its surface being of a leaden color and disturbed by numerous openings of the size of a pin's head, its free extremity being marked by ulcerations. The mucosa of the cæcum, in the vicinity of the valve, as well as along the colon, presents a very irregular surface and is full of patches of a grayish-black color and full of clefts which interrupt the consiguity of the surface; between these grayish-black patches the mucosa is clouded and of a leaden color, its surface being very uneven, while in other places it is smooth and retains its normal lustre, but has a sort of granulated appearance. The round or oval neoplasms, previously alluded to, present a center having either a grayish-black or quite black color, their surface being clefted and irregular, while their peripheries are less dark and of a dead-gray color, the clefts and irregularities being less and less marked as one approaches the circumference of these projections until at their extreme limits they have a finely granulated appearance. The thickness of these objects increases from their peripheries towards the center. The clefted tissue is dry and friable in the center, but more moist and consistent towards the circumference and still wants the tenacity of normal tissue. Sometimes we meet with clusters of these objects lying in close apposition, or they become confluent, forming a mass lying transverse or longitudinal to the course of the intestine."

So much for Roloff, and if the reader will refer to the original, he will find that the author writes as if describing lesions frequently met with in swine, and not an occasional occurrence. Again, if those interested will turn to my report, page 214, and to plates IV and V, they will see described and illustrated a case of American swine-plague so exactly corresponding in lesions to Roloff's description that either one would answer equally well for the other, and let it be said, that up to the present time we know of no other disease of swine in which such intestinal lesions occur than the American swine plague, though in a large experience one will meet with many cases in which they are absent, but never in a herd outbreak in which the disease has a duration of over five or six days, will it happen that cases approximating the above will not be seen. Let us now consider Schütz's second series of experiments as compared with the first and with Lœffler's.

As regards the history of the swine from which the first lot came, we have no description of their feed, or how they were kept, nor of the external phenomena presented by the animals, as only the stomachs, spleens and livers of three swine were examined, so that we know absolutely nothing of enormous œdema having been present, and we have seen also that it was not present in any of the subcutaneous inoculated animals, even the pigs, which is in marked

contrast with Loeffler's case. Again, the course of the disease was twenty-four, forty-eight, and thirty-six hours respectively, in the three experimental swine inoculated with pure cultures from the above mentioned organs, and as was to be expected, by any one of experience, not a single one of these three hogs presented any phenomena of pneumonia, and it seems as if we might also question the fact that if the original animals had had consolidated lungs that they would have been sent to Schütz with the other organs.

Formerly I thought the diseases identical, and all we miss is the "enormous oedema," but it must not be forgotten that in Loeffler's pig, inoculated with pure cultures from the first one, he speaks of "enormous oedema of the skin." It seems strange that if Schütz produced any such striking phenomenon that it should not have attracted his attention in as marked a manner as it did Loeffler. The most essential point, however, is the killing time, or the period elapsing between inoculation and death which corresponds, viz.: from twenty-four to forty-eight hours, and Kitt, a most reliable observer, says that the German "schweine-seuche" has generally a course of from one-half to two days," and in another place, that the wild-seuche departs itself in swine as a highly acute disease having a course of from twenty-four to forty-eight hours." (Monatshefte für Thierheilkunde, Vol. II, pp. 93-94.)

Point No. 1. Here then we have a disease (perhaps two), with a clinical and experimental course of twenty-four to forty-eight hours, either characterized by enormous oedema, or some being present, Schütz, and in this character and by subcutaneous inoculations not accompanied by pneumonia. Regarding the Putlitz hogs, we have a clinical history which seems to have been utterly ignored by Schütz in drawing his conclusions.

2. We have a local cause, a disease occurring in a dairy, which is worth considering, and Kitt tells us (l. c.) that "for the etiology and prophylaxis of the German schweine-seuche it appears important that the greater epizootics (enzootics?) have been observed in dairies, and that the inficiens can increase in sour milk, and that such milk and swill give the chief occasion to infection," p. 94, l. c.

3. Dr. Hirschel reports the natural course of the disease to have been eight to ten days.

4. All four hogs sent to Schütz from Putlitz were diseased with extensive pneumonia, and none with enormous oedema.

5. It seems utterly incomprehensible how any person with any claims to being an exact and scientific experimental pathologist could have overlooked these facts, and above all have neglected to make the same kind of experimental tests in both cases, and also test inoculations with the cultures from the two different sources in the same way and at same time in hogs only.

Schütz did not do this, hence his work is unscientific and unreliable. With pure cultures from his organs of the first lot he made subcutaneous inoculations in hogs, and produced death, as said; in twenty-four to forty-eight hours, but with the same material from his Putlitz hogs he did not make a single subcutaneous inoculation in hogs; and, while he made intra-pulmonal inoculations and spray aspiration experiments with his Putlitz cultures, he did not do the same with those from his first hogs.

Hence, Schütz has failed absolutely in giving any exact scientific proof.

1. That the disease he studied was identical with that observed by Loeffler.

2. That the disease from which the hog died that he obtained his first series of organs from was specific pneumonia in any sense of the word.

3. That the Putlitz swine were diseased with a disease identical with either of the others; or, in fact, that his conclusion that it was a specific pneumonia, as he claimed was correct, for, if Schütz has had any experience in hog diseases whatever, he should know that any acute septicæmia of eight to ten days duration will lead to pneumonia from circulation disturbances in almost every case, and the more prolonged a case is over that time, the more severe and destructive the pulmonary lesions.

4. That Schütz gives no evidence, and there is none that can be produced to-day, which goes to show that Roloff's caseous enteritis has any relation whatever to the disease, or diseases, described by him.

5. Schütz seems to have forgotten his own assertion, "if now, the bacteria found in the lungs and those in the spleen of the diseased swine corresponded in form, or even in cultures, that does not prove them to be identical."

"So ging daraus noch nicht dass sie identisch waren." To the mind of every person competent to express judgment upon such a complicated question as we have before us, it must be self-evident that the testimony brought forward by Schütz does not justify the conclusion that the hogs examined by Loeffler and himself, or their experimental evidence indicates that the name "schweine-seuche" can at present be considered to represent one single disease, but that, on the contrary, the German evidence before us, in the most modern literature, indicates the presence of at least four different infectious diseases among swine in Europe, viz.:

1. Rouget, or Rothlauf, the idiopathy of which is not to be questioned.

2. The world-wide swine plague (hog cholera in the United States, swine fever in England, and swine pest in Denmark and Sweden.)

3. A disease, or diseases, caused by one or more of a class of pole ended, diplo-coccoid looking bacilli always occurring in connection with swill-feeding in some form or other, or with an undue amount of filth composed largely of animal refuse to which the name schweine-seuche has been given.

4. The disease known as "wild-seuche," which has a germ so nearly like those found in class 3 that at present we do not know of any reliable differential characteristics.

THE SO CALLED "WILD-SEUCHE."

The more one ponders over the questions here brought to discussion, the more difficult it becomes to arrive at any satisfactory conclusion. Considering the very great number of laboratories in Germany, as well as other parts of Europe, fitted up more or less completely for the purposes of original investigation in questions of this nature; and especially bearing in mind the very large number of competent investigators, all of whom have greater advantages for work than any men in this country, it must be admitted that the German and European researches in animal diseases, especially those of swine, have been very poor, and utterly inadequate to what we have a right to expect. It has not been a scientific and exact study of these diseases as they should be investigated, but has rather been the laboratory investigation of a few diseased animals. So far as we know, very few trustworthy confirmations of Schütz's work have come from other investigators in other lands, and those of Blaisch and Fiedeler, far more extensive

and reliable than those of Schütz, while going to confirm his work as to bacterial etiology, actually contradict Schütz's assumption of the existence of a "seuche" or pest, and show most conclusively that it is connected with swill-feeding, and is entirely of local origin.

The only doubtful fact in the whole question is the place of the disease called "wild-seuche" in the category. The exact extension of this disease over Germany or Europe is by no means well established. That it is merely a local affair, and not a seuche, is also self-evident. One singular thing about the whole matter is that since Schütz's publication in 1886, I do not know of a single investigation or individual outbreak of this disease, though such may have occurred. Let it be understood I am not denying the existence of this disease. The question is, whether or not it was the disease studied by Loeffler and identical with that swine disease which observers speak of as killing in twenty-four to forty-eight hours. If this last disease exists in connection with swill-feeding only, and there is also a disease as described by Hirschel which has a general course of eight to ten days, and is characterized by pneumonia without intestinal ulcerations or neoplasms, then there are two different diseases having very similar but differently deporting germs. There is one fact which speaks most strongly against the identity of this wild-seuche with the swill or filth diseases, no matter how apparently identical the germs may be, and that is the conditions, so far as known, under which the wild-seuche has heretofore been reported to occur under natural circumstances. It was once considered to be anthrax, but in a negative manner, that is, by his inability to discover bacillus anthracis in connection with it, Bollinger differentiated the wild-seuche from anthrax, and established its idiopathy—1878. It is known to occasionally occur among the wild deer—hence its name—and hogs in the royal preserves of Germany, where it has sometimes caused immense losses, and has also occurred naturally in cattle, and is capable of extending to horses. In other words, it has heretofore been a local disease of animals in the places mentioned. It has been divided into three forms—the exanthematous or cutaneous form, the pulmonary, and intestinal, as these organs seem to be infected in a marked degree beyond the others, and as indicative of the locus of primary infection. The exanthematous form is especially characterized by enormous oedema and hemorrhagic oedematous infiltration of the cutis and subcutaneous tissues, but as to whether any of these forms are necessarily idiosyncratic is to my mind very doubtful, as it is probable that serious interference of the circulation and capillary embolism could cause either one, no matter in what way primary infection may have taken place. It is worthy of mention that the pneumonia in this disease is said to be fibrinous, and no attention has been called to any necrobiotic or destructive disturbances in the lungs, such as Schütz describes, which would be impossible if the course of the disease is from twenty-four to forty-eight hours, or even under five or six days; or, as Friedberger and Fröhner say, "the average duration is from twelve to thirty-six hours; minimum six hours, maximum three to four days."

To my mind the peculiar local origin of this disease, its lesions and clinical course, essentially and practically differentiate it from the "schweineseuche" as defined by Schütz, that is, "a mortifying destructive pneumonia."

The puzzling and open question is, What to do with the cases studied and induced by Loeffler, which in

their "enormous oedema" exactly fit into the exanthematous form of wild-seuche, and more or less with Schütz's first cases with some oedema and a like short course?

Has the germ of the wild-seuche been domesticated upon the farms or in the stables and hog-pens of Germany?

We cannot answer that question.

I have previously alluded to the fact that Schütz's method of experimentation in his two series of investigations was unscientific, and hence unreliable, because the same system of introducing the cultures was not adhered to in both cases. I am strongly opposed to Schütz's conclusion that even his Putlitz disease was necessarily a pneumonia, for, as already indicated, I can produce a pneumonia in hogs by the subcutaneous inoculation of our swine-plague germ, which, according to the duration of the disease, will fit in to either of Schütz's cases, even to his very chronic one. The introduction of the cultures directly into the lung is, in such diseases, an unnecessary and an unwarranted procedure; for, if a given germ will develop rapidly in the blood of a hog, even though not specifically pathogenic, it will cause pneumonia if introduced into the lungs direct. I am well aware that the majority of germs one finds will not do this, but such germs will not develop in the blood of the living hog. There is no question but what the Loeffler organism and Schütz's first germ would also cause pneumonia if introduced in the same way. On the other hand, we have positive evidence that they did not produce it when introduced subcutaneously. What we want to know is, what the Putlitz germ would have done used subcutaneously? and this is just what Schütz failed to demonstrate. It is well known, however, that cultures sent out by Schütz have utterly failed in hogs in subcutaneous injections, even though the smallest doses had all the virulence he claimed for them in rabbits. I have myself injected 3 ccms. of a pure bouillon culture of his organism into pigs three months old subcutaneously, and even failed to have any severe effect when introduced directly into the lung. I am informed that Schütz failed with his germ in England, and know that Baumgarten also failed with cultures direct from Schütz's laboratory.

There is more in these bacterial tests than most people wot of. There is not the exact control of virulence between given doses in small animals of a given germ and the same germ in larger doses in hogs. Something, I do not know what, is lost in time so far as the hogs are concerned. For example, I can select an outbreak of our swine-plague in which 1 cubic-centimeter of a bouillon culture, first generation, will kill nearly every hog it is injected under the skin of, no matter how large the number may be, and all shall be terribly ill. A given dose of that same material will kill a rabbit, or any number of rabbits, in about three and a half days, and continue to do it in any generation (I can speak for the one hundred and fortieth); but pigs will now successfully withstand three times the amount that would kill or sicken every hog in one-third the amount in the first generation. This I know and can demonstrate at any time, and have done so time and again. The very same thing must have occurred to Schütz, or else he has not had the same germ in every case. I am perfectly convinced that there are several germs occurring in hogs that cannot be positively distinguished from one another, or from the culture of the Schütz germ which I had, either by the microscope or in cultures—a matter which will be referred to in

detail when I come to report my own investigations upon this subject. For small experimental animals it seems as if the virulence of these germs and our swine-plague can be kept up at one standard indefinitely, but that this cannot be done in the same manner for hogs.

I think that in Schütz's interpretation that his disease is primarily a pneumonia, and that generalization of the germs takes place from the lungs, is absolutely erroneous, and that, as he first concluded, the disease is pathogenically a septicæmia, no matter how the germs are introduced.

THE NAME "SCHWEINE SEUCHE" WRONGLY
SELECTED.

The reader must have been convinced from the careful consideration of the foregoing that the Germans actually knew very little of a positive and exact scientific character of the infectious diseases to which their swine are afflicted. We have seen that Schütz did not accept Eggeling's differentiation between Rothlauf and schweine seuche, and that not one single veterinarian whom Schütz speaks of or quotes knew the difference, for all the swine or pieces of such sent to Schütz were sent in as from a "Rothlauf ähnliche krankheit," or as "Rothlauf erkrankt," that is a disease resembling Rothlauf, or that disease itself, and the most recent literature shows the same uncertainty. It is also a well known fact that up to the year 1886, when Schütz and Loeffler published their investigations on Rothlauf, that the whole world thought there was but one common swine plague, these researches being the cause of the differentiation of Rothlauf as an idiopathic disease.

This disease being here established as a pathological entity, Schütz, following Loeffler, discovered these other germs in hogs supposed to have the Rothlauf by the country practitioners, and as he proved these germs to be specifically pathogenic in hogs, it is self-evident that as hogs were dying in Germany with somewhat similar symptoms, that Schütz assumed them all to have the same disease, and on account of its wide distribution called it the "schweine-seuche," an absolutely unwarranted conclusion and nomenclature. There is a vast difference between a wide extension and wide distribution. The word "seuche" in good honest, old-fashioned German means a pest or plague, a disease which sweeps, and a disease not due to local causes, but a general and widely-extended cause, such as the lungen-seuche (pluro-pneumonia), the rinderpest, the Asiatic cholera, the small-pox as it used to be, the horse disease in this country in 1872, la grippe as it was last year. A disease occurring in various localities is widely distributed but not extended, though killing thousands of individuals every year, as pneumonia cannot be said to be sweeping in character, and hence, cannot be justly termed a plague. We do not even give that name to tuberculosis, the most widely extended disease of mankind, because, though it is the cause of death of two-sevenths of the reported causes in the vital statistics of civilized countries, still it has never had, and never will assume, a sweeping or pestiferous character, carrying off people by the wholesale. We have epidemics of typhus abdominalis of diphtheria, of scarlet, but terrible as is the mortality accompanying these diseases at times, they never rise to the dignity of a plague. Neither the wild-seuche, anthrax, or this so-called schweine-seuche, as a whole, arises to the dignity of a sweeping plague. See what Schütz says,

"that the veterinarians report a loss of two hundred swine, valued at \$1,500, the previous year." Two hundred swine! Does that look like much of a plague? Let us take a look at the last Annual Report of the Extension of Animal Pests in Germany, 1889, and see what it says. It speaks of two pests, the Rothlauf and schweine-seuche, and says, "the last is not so widely extended as the first," but it is self-evident that they know little or nothing about it. In Prussia, only 1,429 hogs are reported as having died, which is far too small a loss to be considered correct, but gives evidence that no plague existed; while in Baden, where the statistics seem to have been better collected, the whole number of swine, nominally reported to have had the Rothlauf, was only 3,014, of which 946 died a natural death.

Now, compare this with the loss in this country the past year, which surely did not amount to less than \$30,000,000, and most probably far exceeded that sum. Let me speak of events I personally know of. One man lost 2,985 hogs out of 3 lots in close proximity containing 3,135, and hundreds of farmers lost hundreds of hogs each; in fact, I have such a terrible array of losses this year in my records that I am loth to publish them, but never in its history has swine-plague swept from Ohio to Missouri with greater virulence than during the fall and winter of 1890 and 1891. This is what I call a plague, but I do not call a disease a plague which is due to local causes, and only occurs in connection therewith, no matter how many hogs it may happen to kill off. One might as well call a case of local poisoning a plague as to give the name schweine seuche to the disease, or diseases, studied by Schütz. Then consider his material, the stomachs, livers, and spleens of three hogs, and four whole cadavers, that is the "grossartige materiel" as Schütz calls it in one place. Studied in Berlin, too, without an iota of personal investigation of the disease as it occurred in nature. I wonder what Schütz would think of some 2,800 autopsies, representing about 2,000 outbreaks, and cultures made more or less extensively from the organs of the majority, and observations made in various parts of four States, any of them larger than Prussia, and, for aught I know, as big as all Germany, and none of these made on organs sent in, but the majority made on hogs purposely killed, and all upon hogs in the midst of outbreaks in herds of seldom less than 100 hogs, and this does not include innumerable organs sent to me by express from different parts of the country, also representing diseased herds, of which I have a record that need not be introduced here. To investigate an animal disease properly one must go out where the animals are, and live among them, and study all the conditions which support the disease, and work against it. Animal disease can never be studied properly in a laboratory situated in a large city. One could not study our swine-plague at the Chicago stockyards, even though he could obtain thousands of diseased hogs a year. To be sure, he could study the lesions and bacteriology of the disease in a most satisfactory manner, but that alone would not prove the most unimportant phenomena connected with the disease. The clinical history, the manner of care and feeding, the influence of climatic and telluric conditions, of transport, of the ways of extension over the country are fully as essential points, and those upon which practical hygienic prophylaxis must be based, but they would be still a sealed book to the investigator working in a city laboratory.

Another thing of importance with reference to Roloff's intestinal lesions is, that Peters, one of the

most experienced veterinarians in Germany in daily practical observations among live stock in the country, says, in a recent publication, that he has met with far more cases in which the pneumonia was accompanied by intestinal lesions than with pneumonia alone, which is what Schütz asserts his seuche to be, and, as I have said, we have no evidence that these intestinal lesions occur in any other swine disease than the genuine plague.

MYOPIA IN THE SCHOOLS OF CINCINNATI.¹

BY FRANCIS DOWLING, M.D.,
CINCINNATI, OHIO.

DURING the past year I have examined 1,000 scholars in the private and public schools of Cincinnati, with a view to determining the percentage of near-sightedness among the pupils, and the principal causes that give rise to the trouble.

I found, in summing up, that out of the 1,000 examined, there were something over 300 who were more or less myopic. Of course, in the majority of these cases—probably in 70 per cent.—the cases were of a low degree; but then the school grades in which they were found were principally in the elementary divisions, and, as I went upward in the school grades, I found that there was a much larger percentage of the higher degrees of the disease.

In a small number of the cases examined I found that one eye was normal and the other eye myopic; but in the great majority of cases both eyes were affected, although often in different degrees.

Several of the private schools for young ladies were first examined, with the following general results:

PRIVATE SCHOOLS FOR GIRLS.

	Age.	Myopia, per ct.	Heredity, per ct.
Mad. Fredin's,	15 to 18	16	8
Mt. Auburn Young Ladies' Institute,	15 " 18	20	6
Dr. Bartholomew's,	14 " 18	14	2

These private schools for girls were, as a general thing, better lighted, better ventilated, and generally in a better sanitary condition than the public schools which I examined. Then, too, there seemed to be a more intelligent distribution of the tasks and number of working hours to suit the individual aptitudes of the scholars. In most of the private schools the pupils were discouraged from studying their lessons at night time; and, where it was found necessary to do so, the best contrivances for furnishing artificial light were in use.

Among the private schools which I visited, the Mt. Auburn Young Ladies' Institute is particularly worthy of mention as a model of wholesomeness; the ventilation and light there were as near perfect as possible.

The following table shows, in a general way, the findings in the two large musical schools of Cincinnati, as well as in the art schools:

	Age.	Myopia, per ct.	Heredity, per ct.
Conservatory of Music,	16 to 20	56	10
Cincinnati Art School,	14 " 20	42	12
Cincinnati College of Music,	14 " 20	40	15

The highest percentage in the art school was found in the classes where the fine shading is done, and the lowest in what are called the life classes, or the classes composed of scholars who draw and paint from life.

¹ A paper read in the Section on Ophthalmology of the American Medical Association at its Forty-second Annual Meeting, at Washington, D. C., May 6, 1891.

In the Conservatory of Music and the Cincinnati College of Music, the very high percentage of myopia is due to several causes; the principal one is, in my opinion, that the majority of pupils who come to these institutions to study and fit themselves for teachers are persons of limited means, who feel that they are compelled, for this reason, to crowd about two years' study into one; and, in order to accomplish this, they have to study all day and part of the night; consequently the eye-sight of many of them is ruined by the time they finish their studies. I think the blurred, indistinctly-written notes that they often read their lessons from furnish another cause for this large amount of myopia. The college authorities ought to look into this matter and forbid the use of any but well-printed, legible notes for use in the College of Music.

Contrary to what I expected, I found the Southern girls among the most industrious pupils in the College of Music, and there was a correspondingly large amount of myopia among them.

In my examinations in the public schools I found that there was scarcely any myopia in children under nine years of age; and this tallies with the findings of Cohn, and others who have given attention to this subject. Most very young children were, on the contrary, hypermetropic, owing, probably, to an undeveloped state of the globe of the eye.

I give here a few tables showing the state of things in the schools, and begin with the scholars in two of the best ventilated and best lighted of the newer buildings.

PUBLIC SCHOOLS.

28th District.	Ages, 9 to 10.	Ages, 10 to 11.
German.	Boys, 9 per ct. Girls, 6 per ct.	Boys, 9 per ct. Girls, 12 per ct.

WINDSOR STREET SCHOOL.

22d District.	Ages, 10 to 11.	Ages, 11 to 12.
English.	Boys, 10 per ct. Girls, 15 per ct.	Boys, 15 per ct. Girls, 20 per ct.

22d District (Int.)	Ages, 10 to 11.
English.	15 per ct.
German.	24 per ct.

22d District (Int.)	Ages, 11 to 12.	Ages, 12 to 14.	Age, 15.
English.	Boys, 6 per ct. Girls, 18 per ct.	Boys, 20 per ct. Girls, 30 per ct.	Boys, 18 per ct. Girls, 36 per ct.

22d District (Int.)	Ages, 11 to 12.	Ages, 12 to 14.	Age, 15.
German.	Boys, 12 per ct. Girls, 40 per ct.	Boys, 30 per ct. Girls, 30 per ct.	Boys, 36 per ct. Girls, 42 per ct.

Here I wish to give the percentages in two of the old, badly-lighted and worse-ventilated schools in the crowded down-town districts; the last of these, the old 13th District, is a disgrace to the city, and ought to be abolished for school purposes. In the majority of the rooms of this school, in addition to poor light, the desks were so badly arranged that the little children were found trying to write in their copy-books in the shadow formed by the hand that held the pen.

2d District.	Ages, 12 to 14.	Ages, 12 to 14.
English.	Boys, 24 per ct.	Girls, 48 per ct.

2d District.	Ages, 12 to 14.	Ages, 12 to 14.
German.	Boys, 36 per ct.	Girls, 54 per ct.

13th District.	Ages, 10 to 12.	Ages, 10 to 12.
German.	Boys, 54 per ct.	Girls, 72 per ct.

In all the examinations in the public schools, I found a very much larger percentage of myopia among the girls than among the boys. This is probably owing to the fact that the girls, in addition to their regular school tasks, do a great deal of near-work with the eyes at home, such as sewing, etc., which the boys escape.

The German children had a much larger share of myopia than those of English or Irish parentage. This I attribute to three causes:

1. There is probably something inherent in the German organism that predisposes to the disease, probably owing to the naturally studious and thinking nature of the individual.

2. In our schools the German children, in addition to the regular prescribed English studies, have German as an additional labor.

And, lastly, the German text-books still retain the old crooked German letters, which are extremely fatiguing to the eyes.

And right here I must express my astonishment that our school boards do not immediately cause these letters to be banished from the school books, and substitute the Roman text, which are less fatiguing to the eyes. In progressive Germany this was done years ago, and now all scientific works in that country are printed in Roman letters. In a series of experiments which I made during my examinations, I found that the German letters were almost twice as fatiguing to the eyes as the Roman letters of the same size in the same text-books. The ratio stood as seventy seconds for the German letters and one hundred and twenty for the Roman letters.

As a result of my examinations in our schools, and some additional observations that were made in Germany and France during the years 1883 and 1884, the following facts were brought out concerning the development of myopia.

1. There is often a predisposition on the part of the individual, inherited or otherwise.

2. The trouble commences to manifest itself about the ninth year, and from this time on, until the eighteenth year, makes its greatest progress.

3. The disease increased, both in frequency and degree, as one goes from the lower to the higher classes in the schools.

4. That the German children have a greater tendency to the disease than those of the English-speaking parentage, and in this connection I would state that I witnessed proportionately more cases of myopia in Germany than in any other country which I visited in Europe.

5. Bad light and bad ventilation serve to materially increase the percentage of cases and their degree in schools. This was very forcibly illustrated in the very much lower percentage which I found in my examinations in the newer schools of our city, and the much larger percentage and the higher degrees of cases found in similar grades in the old, dark schools, which are known as the down-town districts. In speaking of this question of old school houses in their relation to the causation of myopia, Florschütz says that the number of myopic pupils fell from 21 to 15 per cent. three years after the building of the Coburg schools according to hygienic principles; and Vonhipple, in an address at the anniversary of the foundation of the University of Geissen, made the statement that he found only 34 per cent. of myopia in the new schools of Geissen, compared with 40 per cent., which was the usual average in the old buildings.

Lastly, the bad condition of the black-boards in many of the schools contributes largely to the causation of myopia. In many of the old buildings which I examined, these boards were in a demoralized condition—the slating in places was worn off in large sections, rendering it very difficult to read the writing.

As a result of all the information that I have been able to gather in regard to the various points that enter into the causation and development of myopia in general, and more especially in its relation to the schools, I would make the following suggestions as a means for abating, in a measure at least, this growing evil:

1. The appointment of a competent medical officer, who should have complete control of the sanitary regulations of our schools; should have charge of regulating the tasks for the children, the number of hours for study, etc., according to the physical aptitude of the individual; and in this connection I must say that in my opinion the present system of like tasks and number of working hours for all pupils alike, in the same grades, irrespective of the physical and mental powers of the individuals, is very unjust and unwise, for the reason that those who inherit weakly constitutions and weak eyes, etc., will necessarily be at a disadvantage in their endeavors to keep abreast of those who may be naturally endowed with stronger eyes and stronger physical powers.

Teachers witness examples of this every day in our schools, and many of the broken-down constitutions and bad eyes of later years no doubt trace their origin to over work during these very school days.

The medical officer whose appointment I have suggested should be a man of the highest and broadest intelligence, and should be entirely free from all political manipulations and cliques of whatsoever kind. He should, among other things, be consulted in the drawing of the plans of all new school houses about to be erected; should be invited to make suggestions in regard to the construction of such schools, with a view to getting the best advantages in them of light, ventilation, etc.

2. The sanitary condition of our schools should be first-class in every way; ventilation, light, etc., should be as near perfect as possible, and our school boards should spare no expense in keeping up this condition of things, for it has an immense influence for good, both on the condition of the eyes as well as the general physical condition of the scholars.

3. Whenever the system of one affected with or predisposed to myopia becomes at all relaxed, all work with the eyes should be suspended until the health is again entirely restored to its normal condition, for it must be borne in mind that it is during lowered conditions of the system that certain forms of myopia make their greatest progress. In this connection it will not be out of place to state that a large percentage of the cases of myopia that came under my observation, particularly in the clinics of Germany and France, were among subjects burdened with some constitutional taint, such as the tuberculous, scrofulous, etc., owing to which the powers of life were usually below a healthy standard, and this in itself, as is well known, plays no small part in furthering the development of the myopia, and singularly enough it is especially during the years that myopia usually makes its greatest progress—viz.: from the tenth to the twentieth year—that tuberculosis and its near relation, scrofula, make their greatest advances.

Therefore, the condition of the general health of a young myope, should receive the most careful attention on the part of the medical adviser.

4. The books from which one predisposed to myopia should study ought to be printed with tolerably large type, and the Latin letters are the best of all others, as being less fatiguing to the eyes than the German, etc.

5. In reading, writing, etc., the eye should be kept at a distance of about thirty centimeters from the text, and the reading, etc., should be frequently interrupted, so as to rest the eyes. They should be closed for five minutes or so at a time, or directed at some far away point.

6. Young persons predisposed to myopia should not study at night time, and all near work with the eyes should, when possible, be done by good clear sunlight.

7. The so-called shading and tinting in the drawing department of the schools should be entirely dispensed with, as examinations show it to be very injurious to the eyes of the pupils, and a large percentage of our scholars have to be excused annually from doing this kind of work.

8. For those scholars who study German, a corresponding number of other studies, as for instance music and drawing, should be cancelled, so as to equalize things in the way of labor, between the children in the English and German departments. In making the suggestion I do not do so as a crusade against the German language, *per se*, but rather with the object of giving the German children a much needed rest for their eyes at a time when they very much need it. I think of all the foreign languages a knowledge of the German would be, for many reasons, the most desirable for the scholars in our schools. Still I am of the opinion that the study of this, as well as other foreign languages should be relegated to the high schools and colleges, where it would not absorb the time that the children so very much need for the study of the ordinary English branches.

9. In cases where the myopia is at all pronounced, all near work with the eyes, such as study, etc., should be postponed until the sixteenth year. The child should, if possible, be sent to live in the country where the range of vision is longer than in the city, and then it should be kept out doors, in the fresh air, as much as possible.

10. The wearing of glasses by a myope is optional, at least for distant vision, as they have little, if any, influence in checking the progress of the affection. They are only useful as a means of enabling the wearer to recognize more clearly his surroundings, and when worn, should be of a weaker refractive power than that necessary to correct the actual degree of myopia present. If, however, the myopia is beyond a certain degree, any three dioptrics, then the use of proper concave glasses for reading, and all other near work, may limit in a measure the progress of the disease, by relieving the strain on the muscles of convergence, and in this way lessening the tension on the globe of the eye, which is one of the great factors in furthering the march of the affection.

11. In tolerably high degrees of myopia I have found paracentesis of the cornea, by means of a fine needle, to do a great deal of good. It removes the intraocular pressure that is often very marked in such cases, and thus retards the progress of the myopia; then another thing, it lessens the chances of detachment of the retina, which so often takes place in high

degrees of the affection. In practicing the operation, after making the puncture in the cornea, I usually cause the fluid to escape from the anterior chamber slowly by pressing on the cornea, alternately with the lower and upper eyelid. Twice a week is as often as I practice this treatment in any given case. The great advantage in letting the fluid escape slowly, is that the shock to the eye is not as great as when it is emptied rapidly.

SIMULATION OF MULTIPLE CEREBRO-SPINAL SCLEROSIS BY LA GRIPPE.

By S. V. CLEVENGER, M.D.

A SWEDISH sailor living under rather insalubrious conditions, during the course of an attack of the prevalent influenza, developed incoördinate symptoms and paraplegia, which caused his physician, Dr. Whitnall, to call me into the case. I found the patient unable to walk from an incomplete paraplegia (paraparesis), without anæsthesia. There was marked nystagmus previous to my seeing the sufferer, which had improved at the time of my visit, a week after it began, and in the second week of his sickness. The intentional tremor of the head, neck and arms was precisely what is seen in advanced cases of multiple cerebro-spinal sclerosis, but owing to its having suddenly appeared I decided against the probability of the real disorder existing, and regarded it as of purely functional origin, predicting recovery, which fully occurred in a month, but another month still was required before he fully recovered from the exhaustion following the disease.

Landon Carter Gray in Sajous' Annual, 1891, refers to a recent case of functional simulation of multiple sclerosis cited in the *Montpellier Médical*, and previous instances reported by Westphal, Maguire and Bobinski. Hysteria in my case could be absolutely excluded.

CHICAGO, ILL.

The Polyclinic.

MEDICO-CHIRURGICAL HOSPITAL.

THE time of appearance of the eye teeth averages eighteen months, almost to a day. Some children have flatulence, constipation, convulsions, etc., at the time of dentition; these are due, not to dentition, but to the changes in the food which take place about that time.

The fever of dentition is relieved by hot or cold bathing, or by drop-doses of aconite, which will probably tide over the period of irritation which comes with dentition, and will prevent convulsions. If convulsions are imminent, give small doses of bromides.

—Hollopeter.

The most prolific exciting cause of aneurism is violent, sudden effort; heavy lifting, long-continued effort is not so likely to produce it.—Anders.

If gonorrhœa lingers beyond twelve weeks, there is always found a damaged portion of mucous membrane. This is incipient stricture; there is first a granular urethra.

Where gonorrhœa in the female is confined to the vagina alone, it may be quickly cured by applying powdered tannic acid until it almost completely fills the vagina. If there is inflammation of the cervix, plug up the neck of the uterus with cotton bathed in iodoform and glycerine, and apply tannic acid to the vagina as above.—McConnell.

When doubtful as to whether an abdominal tumor is attached to the uterus, have an assistant draw the tumor up into the abdomen, and another draw the uterus down with forceps. If the uterus is attached, you will find that it cannot be dragged downward without dragging the tumor with it.

—*Montgomery.*

FOR ECZEMA AND ALL SKIN IRRITATIONS IN INFANTS:

R.—Ac. salicylic gr. xx.
Zinci oleat..... ʒii.
Cocain..... gr v.
Pulv. amyl., q. s..... ʒii.

M.—Sig. Use as powder, externally.

Salicylic acid prevents fermentative changes in the skin; oleate of zinc adheres very closely to the skin, and protects it; the cocaine may be put in or left out, according to whether there is pain or not.

If, on the second visit, there is little pain, and the scales are drying up, the cocaine may be discarded; later, the zinc may be left out, then the acid, so that finally only the starch is left. After this, alcohol may be used.—*Hollopeter.*

Carbolic acid, as an antiseptic agent, must not be used in a solution weaker than 5 per cent. Less than this may keep the germs from growing, but will not destroy them. It will, however, destroy the pus germs.—*Laplace.*

Heart-burn is caused by an acid condition in the stomach.

The stomach of a new-born babe is alkaline. The moment it becomes acid, we have troubles with the mouth—stomatitis. In this case, the alkaline secretions of the mouth change to acid, and fermentative changes take place.—*Hollopeter.*

Never use sulphur externally, on the surface of the skin, where the glands are open, as it will collect in the glands and give the appearance of gunpowder on the skin.—*Shoemaker.*

To differentiate between epithelioma and lupus at their onset: The papules of lupus are multiple and small; the papule of epithelioma is larger and single. *Shoemaker.*

Syphilis, in all its stages up to a certain point, is a constructive metamorphosis. In other inflammations of lymphatics there is not the hard feeling; the inflammation is not a constructive inflammation.

—*McConnell.*

None of the physiological secretions of a syphilitic, as the tears, saliva, milk, semen, etc., will give rise to syphilis when uncontaminated. The blood will give rise to it.

Patients who have been syphilitic and have been cured, do not take the disease again when inoculated; however, like other diseases, this immunity wears off, when, if the patient exposes himself, he may again get syphilis, which contraction of the disease a second time, is proof that it was cured at first.

If the father alone has syphilis, it cannot be transmitted.—*McConnell.*

DIFFERENTIATION OF CATARRHAL CONDITIONS OF LARGE AND SMALL INTESTINE, AND TREATMENT.

When the duodenum is affected, we have some jaundice and constipation; furred and flabby tongue; tenderness beneath the right costal border, a little to the right of the median line, clay colored stools.

Pain in the middle of the abdomen indicates an affection of the small intestine; and when so situated, the abdomen about the umbilicus becomes distended and prominent.

We cannot, in all cases, tell whether the disease is confined to the rectum or affects the whole of the large intestine. When the evacuation consists just of mucus and blood and there is a great deal of tenesmus, we may say the disease is of the rectum, but when the discharges are mixed and contain other matter and are hard and scybalous, we may say that the trouble is in the large intestine.

Treatment: Regulate diet. Food should be such as is principally digested in the stomach and should be taken at regular intervals. Insist on cleanliness, with massage of the skin. When possible, give rest and change of air.

In medication begin by getting rid of the mucus which is always in the intestinal tract. When the large intestine is implicated, give injections of warm water, once or twice a week. For the catarrhal condition give subnitrate of bismuth in large doses. If there is pain, give with it some preparation of opium.

When emaciation has progressed considerably, give tonics. A good way to do this is to use a preparation of arsenic in small doses on an empty stomach. One or two drops of Fowler's solution, before meals, well diluted, will build the patient up, and acts well on the local catarrhal condition. Nitrate of silver is an alternative, as well as a local heater, and may be given when subnitrate of bismuth does not act.

Also we want to give iron, but these patients are often bilious, in which cases iron will not act; therefore, before giving iron, give strychnine for a short time, four or five days, keeping the bowels regular, after which we may give the vegetable salts of iron with some such preparation as tincture of gentian.

If remedies do not act, advise a change of residence to the region of the natural mineral waters.—*Anders.*

SPUTUM AS A DIAGNOSTIC SIGN.

In phthisis we have nummular sputum; looks like coin; which floats in a clear liquid.

In measles we have nummular sputum, which floats in an opaque liquid.

In bronchiectasis there is stinking sputum; also in fibroid phthisis we have stinking sputum.

In cancer of the lung, we have sputum that looks like currant jelly.

In pneumonia, we have rusty colored sputum.

In oedema of the lung, the expectoration is serous.

Where we have pneumonia terminating in gangrene of the lungs, the sputum is exceedingly fetid; greenish or brownish.

The sputum of chronic bronchitis, when associated with disease of the heart, looks like the white of egg mixed with water, and may amount to a quart or half gallon in twenty-four hours.

The sputum of chronic bronchitis, when not complicated is large, broad and irregular, and is greenish or yellowish.—*Morris.*

ALBERT FINCH, of Rockport, Indiana, son of an army surgeon, has evinced a wonderful taste for the study of anatomy, and though but five years old he is said to possess a knowledge of the human structure that is really amazing. It is stated that he is an honorary member of the Southern Medical Fraternity. He is known among his friends as "Dr." Finch.

The Times and Register

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RESPONSIBILITY OF THE INSANE.

THAT there are degrees of insanity no one presumes to deny. From violent delirium to the shadowy region in which the highest expert skill is unable to decide between sanity and insanity, there is to be found an unbroken series of cases. But in the eye of the public, accustomed to deal only with elementary colors, the question in each case is the direct one: Is he sane, or is he insane? And upon this view is based, not only the popular, but even the legal, theory of responsibility. Let a man be proved to have ever so slight an aberration from mental soundness, and he is thereby privileged to go up and down like a raging lion, working his own will, without the restraint of law, until he has committed some overt act to justify the community in shutting him up in an asylum for the rest of his life.

Nevertheless, there is nothing in the history of clinical insanity to justify such a view. In the asylum lunatics of all grades are brought under discipline. They are taught the necessity of obedience, to respect authority and the rights of others. They comprehend in nearly every instance that infraction of the laws will bring unpleasant consequences upon the culprit; and the consciousness of this exercises a deterrent influence upon them.

But what would be the life in an asylum, if the doctrine of non-responsibility were applied as it is in the courts of law? In fact, the subjection to discipline is one of the first and most essential steps towards the restoration of the patient to the control of reason.

We may claim, then, that the experience of asylums bears out the assertion that, as there are varying degrees of mental alienation, so there are varying degrees of responsibility attaching to the lunatic. There is no more dangerous man than the one who has a slight mental twist, and is aware that he is relieved thereby of legal responsibility. In fact, it would be

better on the whole if insanity were not to be admitted as a sufficient defence, instead of the ultra sentimental view that prevails to-day.

INOCULATION OF CANCER.

THE reckless experimentation upon human subjects with tuberculin, before it had passed through the proper laboratory investigations, has induced a disregard of individual human life that is becoming manifest. When a government seeks to justify a war, the ultimate good of the community at large is pleaded in extenuation of the sacrifice of individual lives and property. If this be a legitimate excuse it would go far to excuse a great deal of experimentation in matters medical. But the world has not accepted this view as yet, at least in England and America, hence we are not surprised at the universal reprobation expressed in the English journals concerning the action of a European surgeon.

At a recent meeting of the French Academy of Medicine, M. Cornil presented a communication, stating that it was made by a foreign surgeon whose name was withheld. In it two cases were described. The first was that of a woman from whom the surgeon removed a cancerous breast. Beneath the skin of the other breast, as yet healthy, a small piece of the cancerous tissue was inserted, with strict antiseptic precautions. The patient being still under the anesthetic was unaware of the experiments to be performed upon her. The graft took effect, an indurated nodule followed, and in two months it had grown to the size of an almond. This was removed, and on microscopic examination presented the characteristics of the original growth in an active state of development. Shortly afterwards the patient died of an inter-current malady, and at the autopsy no trace of secondary cancer was found in her viscera. This proved that cancerous tissue could be transplanted from one portion of a patient's body to another. To show that this tissue could be transplanted from one person to another, a second operation was performed. The cancerous tissue was in the same way transferred to the body of a person previously free from cancer; and again the graft retained its vitality and a cancerous nodule resulted. This patient, however, refused to allow the surgeon to remove the nodule, and left the hospital, to die of cancer, intentionally implanted in her body to decide a moot point in pathology.

No pretense can be made that by this shocking crime there will be the slightest advance in the treatment of cancer, and that thus one woman's life has been sacrificed for the salvation of others. The question even yet has not been settled, and the experiments were worthless. Every one knows that the elements of cancer spread along the lymphatics, and hence give rise to the disease at a distance from the original site. It is likewise a matter of universal cognizance that grafts from one portion of the body may be transferred to another part, and flourish in the new site. As the fragments of cancerous tissue must contain also some of the normal tissues of the body, these would, as a matter of course, retain their vitality and pre-

serve the contained cancer elements alive. This experiment does not prove any new thing whatever.

To the credit of the French Academy be it said, this heartless recital did not go unproved. Le Fort entered an indignant protest against this unwarranted action, involving a betrayal of the patient's confidence by taking advantage of the anesthesia to make an experiment that is a disgrace to the surgical art. In 1888, the Society of Biology refused to hear a similar communication, suspended the sitting, and enjoined secrecy with respect to facts that were unanimously allowed to be dishonoring to the art of surgery.

Letters to the Editor.

ADVICE WANTED.

I HAVE a patient with the following symptoms: A lady aged twenty-four years, married and has two children, aged three and five years; has never miscarried; urination somewhat painful; has weak back; pains under, left shoulder-blade; cold feet and hands at times; has pain at times when bowels move; bowels tolerably regular; digestion not good though; has shortness of breath; severe palpitation and soreness over the region of the heart; has some vertigo and bad taste in mouth; vertigo and blind spells; windy risings; and, at times, she becomes powerless: cannot move a single limb; says that she knows all that is going on, but cannot speak or move; these spells last from twenty minutes to one hour. Each time she stoops down she has a severe heart flutter. She is three-and-one-half months gone in pregnancy.

COVENA, GA.

J. MORGAN NUNEZ.

[Examine the urine for albumen and the heart for dilatation. Give diuretics, cardiac tonics, etc. Sparteine in doses of gr. $\frac{1}{4}$ every four hours would probably give good results.—ED.]

FOR TONSILLITIS.

ALLOW me to give you what I consider a new line of treatment for tonsillitis or quinsy. I have been much annoyed, as others have, with this disease, and despite all other remedies have had supuration in most cases. Here is the new idea: First, a saline cathartic, and follow with

R.—Tinct. aconite..... gtt. xxx.
Fl. extract phytolacca..... gtt. xxxx.
Syr. tolu..... q. s. ft. $\frac{3}{4}$ ij.

M.—Sig. A tablespoonful every three hours.

A knowledge of the therapeutic action of poke-root and of aconite, tells at once the reason why it will abort a quinsy. I find it to cure nearly every case, if resorted to inside the first few days after symptoms appear.

WM. B. BIGLER, M.D.

SPRINGVALE, PA.

FOR DYSENTERY.

R.—Mucilag. acaciae..... $\frac{3}{4}$ ss.
Copaiba..... 3ij.
Tr. opii deod..... 3iiij.
Sp. etheris nitros..... $\frac{3}{4}$ ss.
Aque..... q. s. ad 3iiij.

M.—Sig. For an adult a teaspoonful after each movement of bowels.

Will cure almost every case inside twenty-four hours.

WM. B. BIGLER, M.D.

SPRINGVALE, PA.

Book Notices.

THE GENUINE WORKS OF HIPPOCRATES, translated from the Greek, with a preliminary discourse and annotations, by FRANCIS ADAMS, LL.D., Surgeon. Octavo, 766 pages, extra muslin, gilt top, price, \$5.00. New York: William Wood & Company.

It is safe to aver that not one in twenty of those who talk learnedly about Hippocrates ever read a line of his writings, except perhaps in the shape of a quotation picked up by chance. Those who feel an interest in the Father of Medicine are now offered an opportunity to investigate his books for themselves, through the medium of an excellent translation. The author gives us first a learned disquisition on the origin of Grecian medicine, the life of Hippocrates, the authenticity of the treatises attributed to Hippocrates, and the Physical Philosophy of the ancients. Of the sixty-one books attributed to Hippocrates, eighteen are presented as genuine by Dr. Adams, with copious annotations. There are a number of illustrations, depicting surgical instruments, etc., some of which are curiously similar to those in use at the present day.

The Medical Digest.

CHOLERA INFANTUM.—Dr. J. H. Medaris, of Harper, Kan., has for four years employed corrosive sublimate with satisfaction. He gives gr. $\frac{1}{16}$ every four hours, also giving the child water and pulv. acacia ad lib.

EPILEPSY IN THE FROG.—M. Laborde presented to the Société de Biologie two frogs suffering from true epilepsy, with the two periods of tonic and clonicity. One of the two had been subjected to puncture of the restiform body, and the other to partial ablation of the central lobes. Until the present time epileptic attacks have never been noticed in frogs, and M. Laborde is glad to demonstrate this condition of pathological identity between the inferior and superior animals.—*La Tribune Médicale*.

SULPHONAL IN THE NIGHT SWEATS OF PHTHISIS.—Erede calls attention to what he calls "the marked anti-diaphoretic action of sulphonal." He says that if given in the early hours of the evening, it almost invariably succeeds in suppressing or greatly diminishing the night sweats of phthisis. A dose of $\frac{1}{2}$ a gramme, given in the form of pastille or suspended in some gummy vehicle, generally suffices. The largest amount given was 1 gramme; this failed of its effect only in a very few cases in which the disease was extremely advanced. As no untoward effects were ever noticed, even in very debilitated patients, Erede thinks that with proper precautions the drug might be pushed up to 2 grammes, the usual hypnotic dose. In many cases he observed that in discontinuing the sulphonal after a time the sweating did not begin again at once, but only after some days, when it was immediately checked by repeating the medicine. This shows that the organism does not readily adapt itself to the prolonged use of the drug, as it does, for instance, to certain narcotics. Erede is inclined to think that the effect of sulphonal in checking diaphoresis is to be explained by its action on the nervous system.—*Brit. Med. Jour.*

ARSENIC IN THE TREATMENT OF WARTS.—Dr. Paul Müller, of Hamburg, writing in the *Allgemeine Medicinische Central-Zeitung*, "cannot sufficiently recommend" the internal use of arsenic in the treatment of warts on the hands. He has employed it for more than two years and always found the warts disappear within three weeks. Another practitioner, Dr. Pullin, who seems to have used arsenic for the same purpose somewhat longer, says that he has known it cure warts in eight days. The dose ordered by Dr. Müller is only at the beginning, two drops of liquor arsenicalis three times a day for adults, and a quarter of a drop for children. These quantities are gradually increased.

THYMUS VULGARIS IN WHOOPING-COUGH.—Dr. A. Neovius reports, in the *Finska Läkarsällapets Handlingar* for March, 1891, very successful results obtained during an epidemic of pertussis by the exhibition of a syrup of garden thyme. He made a decoction of one part by weight, of sweet thyme in seven parts of water, to which was added five parts of syrup of althæa. Of this mixture, from a teaspoonful to a tablespoonful was given eight to ten times a day. The only unpleasant symptom caused by the drug was a slight diarrhoea in most cases. The relief afforded was prompt, the cough soon losing its spasmodic character, and assuming the form of a mild catarrhal bronchitis.

—*Medical Record.*

CREOLIN IN ECZEMA.—I have tried the remedy in cases of scaly eczema and psoriasis with marked relief to the irritability and itching, but it is still too soon to form any judgment as to its curative powers. But in the infective pustular eczema, it is an agent that effectually controls the process, and well deserves a trial on a larger scale. If we accept Unna's definition of eczema as "a chronic parasitic catarrh of the skin, with desquamation, itching, and the disposition to respond to irritation by exudation and well-marked inflammation," then we have a rational basis on which to ground our treatment by such an active germicide as creolin.

—Patteson, *Dublin Jour. Med. Sci.*

CODEINE.—I have used codeine since it was first introduced in neurological practice in 1867, and take this occasion to sound a note of warning in regard to it. It is a milder drug than morphine, but it can enchain if pushed far enough like other nerve enslaving drugs, and if it should come into as general use as the other opiates have, the story of the thralldom of our patients will be written some day as the chains of opium have been described by DeQuincy. There is an Iliad of woe in store for the profession if it should become as reckless with codeine as it has been with morphine. Let us not be too confident of the harmlessness of codeine.

—Hughes, *Medical Mirror.*

THE THERAPEUTICS OF EUPHORINE.—Euphorine, or phenylurethan, which was discovered by Sansoni, is a white crystalline powder with a slight aromatic smell, and readily soluble in wine, which forms a convenient medium for its administration. Sansoni prescribed it in cases where antipyretic, antiseptic, antirheumatic, or analgesic action was required, and stated that it was free from any objectionable action, such as occasionally follows antipyrin, antifebrin, phenacetin, salicylate of soda, and other drugs of a similar class. A number of recent obser-

vations have been made, especially on rheumatic cases, in Professor Stiller's wards in the Jewish Hospital in Pesth. In three cases of supra-orbital neuralgia, and in three cases of sciatica, a cure was rapidly effected, a case of chronic nervous headache was decidedly improved, two cases of rheumatic fever were cured, but in another which was complicated with endocarditis no improvement was obtained, though here salicylate of soda was more successful; in nine cases of chronic articular rheumatism good results of a more or less permanent character were obtained; in three cases of muscular rheumatism a rapid cure resulted; and, lastly, in six cases of habitual hemicrania seen in private practice, the remedy produced an almost magical effect. The doses employed were from three to six grains, and were repeated from three to five times a day.

CANTHARIDES IN CANCER.—More than twenty years ago it was reported that the Russian peasants were in the habit of using some kind of beetle as a remedy for cancer. Since that time some observations have been made which would appear to point to the possibility of cantharides being of some use for this purpose. In 1860 Dr. Wilms excised the left breast for a tumor of the size of a small walnut, which was shown by the microscope to be a reticular carcinoma. It returned, and was again excised a year after the first operation. A mixture of tincture of cantharides and camphorated wine in mucilage was now prescribed, and was continued for three months. The patient who was a widow at the time, afterwards married again, and gave birth to two children. She is still alive, and there has been no recurrence. Again, in 1880, a somewhat extensive cancer of the breast was operated on in the Augusta Hospital, after which the patient was treated with cantharides, and was known to have had no return of the tumor six years later; indeed, she is believed to be alive and well at the present time. Once more, in 1879, a stricture of the œsophagus, evidently of a carcinomatous nature, developed somewhat rapidly in a female patient; she was treated with cantharides, and a decided improvement took place, so that she was able to swallow pieces of food if they were well masticated. She is alive still, but feels, however, some inconvenience from the stricture, and at times is obliged to have recourse to the cantharides. The above interesting facts are published by Dr. Wolfert in the *Berlin Klin. Wochenschrift*.

CONSANGUINITY, CONCEPTION, AND MALFORMATIONS.—Has the condition of the male parent, when begetting, any distinct influence on the offspring? A case related by M. Guéniot at the Paris Académie de Médecine would seem to favor the theory that there is such an influence; but in this case consanguinity must be also taken into account. A woman married her nephew, a man three years younger than herself, and for long addicted to absinthism and other forms of intemperance. She declared that he was always partially drunk when she admitted his embraces. The curse of the mediæval Melusina fell on the offspring; seven children were born, of which only one survived, and several were deformed. The last child was of great size, causing labor to be difficult. It was anencephalous, with six fingers on each hand and six toes on each foot; the external genitals were absent. Two large serous cysts occupied the liver, and were the cause of the great bulk of the child. Considering how some of the most minute physical peculiarities and some of the most

subtle mental characteristics are transmitted from father to child, it is not wonderful that the offspring may be influenced by the state of its sire when impregnating its mother. The influence is probably indirect in a case like the above. No doubt absinthism and ordinary intemperance affect the nutrition of all cells and fluids, spermatic included. The nervous condition of the mother may be unfavorable under the circumstances. The share of consanguinity in this case is doubtful. Recent researches tend to show that unions of consanguinity may keep up or intensify diseases and malformations already in the family, but there is no evidence that they cause new maladies and deformities.—*Brit. Med. Jour.*

PSEUDO-SPERMATORRHOEA.—Dr. Soler y Buscallá (*Revista de Ciencias Medicas.*) In some way, by accident—as we say, although nothing can be accidental in the popular sense—or by design, a little book falls into the hands of some young fellow still in his salad days, in which he finds painted in vivid colors the terrible results of youthful folly or wickedness. And, with that human love for meddling with matters which do not concern us, from sheer or prurient curiosity, he dips furtively into its accursed pages. And woe to him if, not happily disgusted, he do not pitch the book into the fire, and examines for the first time his meatus to tremblingly see if there be or not a drop of some viscid fluid there! And, as we are ever apt to see that which we wish or dread to discover:

"He finds something there; no matter what,
'Tis . . . what he sought! . . ."

And if not his piece of mind, his purity, is gone for ever. Perhaps, thoroughly frightened, he calls upon the old family doctor, some wise and honest man, who, with a smile upon his lips but a reverent heart, can tell and does all the simple truth, and sends the lad home, let us hope, to thank God that he has not made a fool of himself.

But, suppose, in place of doing this, he write to the quack for "advice and medicine," or calls upon some disreputable practitioner still within the fold, one of those scoundrels, as *The Hospital* last month put it, who open penny-a-week dispensaries or sell themselves to some Medical-Aid-Society to murder infants for two shillings per annum, what will the result be? Shame, pecuniary loss, unspeakable misery, aye, madness or suicide. What man amongst us with a few years' experience cannot recall to memory one or more of those blasted lives or piteous endings? If in these skeptical days one could believe in demoniacal possession, surely a quack or a medical swindler is the foul fiend incarnate.—*Prov. Med. Jour.*

EARLY RECOGNITION OF TUBERCULOSIS IN CATTLE.—A most remarkable observation has recently been made by M. Léon Mandereau, of Besançon, which, if corroborated, must alter very considerably our ideas on the subject of the distribution of the tubercle bacillus in generalized and local tuberculosis. This observer removed from the eyes of cattle that had succumbed to tuberculosis a drop of the aqueous humor, stained it according to Ehrlich's method, and found that the characteristic tubercle bacilli were present, sometimes in small, but always in sufficient, numbers to be readily identified. This opened up the way for the early diagnosis of tubercle, and M. Mandereau made careful examination of more than a score of animals suffering from tuberculosis in various stages. As he expected, he found the bacillus

in the aqueous humor in all cases where the condition was generalized; but, more remarkable still, he found them even in those cases where the disease was confined to the lungs and pleura, and even when it was present only in the liver. This being the case, the diagnosis of tuberculosis could be made comparatively easy during life. This observation is so startling that much hesitation must be felt in accepting it; though made in perfectly good faith, it may be nullified by some undetected fallacy; and until it has been shown, that all sources of fallacy were eliminated, it will be well to suspend final judgment. Should it prove to be true, it would be difficult to understand how Cohnheim and Salomonsen's experiments on the production of intraocular tuberculosis are to be explained, if tubercle bacilli in the anterior chamber, when introduced naturally along the lymphatics, do not give rise to any marked symptoms of tuberculosis. Of course, here it may be argued that a wound of the tissues was produced, and that the conditions are therefore not the same. Another point for consideration is that, if these observations be correct, we shall have to revise all our notions as to the presence of tubercle bacilli in the blood and lymphatics of the system generally, even in cases of localized tuberculosis—conditions in which it has been held that tubercle bacilli were localized not only in their action, but also in their distribution. If the wound theory is to hold good at all, we should expect to find that after puncture of the cornea for the removal of the fluid, the tubercle nodules should make their appearance in the eye; and if these nodules do not occur, it is certainly presumptive evidence that tubercle bacilli are not there. Of course upon such a point as this depends the possibility of the application of the method, even if other observers are able to substantiate M. Mandereau's observations. It is not now necessary to consider this question as regards the human subject, except in those cases of acute general tuberculosis which frequently are indistinguishable from enteric fever or certain forms of pneumonia; in such cases it might be valuable, but to the veterinary surgeons, who in their examination of cattle have to contend with numerous, and up to the present almost insuperable, difficulties, it would be of great value.

—*Brit. Med. Jour.*

A NEW VESICAL SPECULUM FOR USE IN SUPRAPUBIC CYSTOTOMY.—Considerable difficulty is often experienced, after the bladder is opened above the pubes, in keeping it dilated sufficiently to get a complete view of its interior. When there is only a calculus to be removed, as a rule but little difficulty presents itself; but if the calculus is encysted, if a portion of the prostate has to be removed, or if a vesical growth is the object of one's search, the bladder oftentimes begins to contract so rapidly that the operator experiences the greatest possible difficulty in bringing his undertaking to a satisfactory termination.

Various plans have been employed to get over the difficulty. Prof. Trendelenburg, of Bonn, places his patients in such a position that the head and abdomen are much lower than the pelvis, by which means the intestines fall back against the diaphragm, and the atmospheric pressure in the bladder tends to keep its walls apart; but there are difficulties in the application of this plan to all such cases. Owing to the interference with the action of the diaphragm and the curvature of the body, which often results, respiration may be interfered with, the anesthetic is resented, and the operation considerably retarded, or

finished with undue speed. Even if this is not the case, the position is an awkward one for the operator, and the bladder rarely remains dilated as long as it is desirable that it should.

Other surgeons endeavor to get over the difficulty by the use of large retractors, or they employ a vesical speculum. The best known of these are Watson's and Keen's, both American patterns; but both are open to the same objection, namely, that they are only two-bladed, and do not keep back the posterior wall of the bladder. Keen himself admits the defects of these instruments in a paper in the *Medical News* of Philadelphia, April 18, 1891, "Five Cases of Suprapubic Cystotomy," where, referring to a tumor of the bladder which he explored, he says: "It was inspected with the electric light, though with some little difficulty. In doing so I used both Watson's vesical speculum and my own, but each had to be supplemented by a long pair of forceps to push back the posterior wall of the bladder," etc.

The very same difficulty has occurred to myself, and to remedy it I have devised a speculum which was made for me by Messrs. Arnold and Sons, West Smithfield, and which I have had in use and tested on numerous occasions during the last eighteen months. It completely gets over the difficulty which is present with all two-bladed specula.

It consists of three blades widely fenestrated, which converge toward a point. The two lateral blades diverge as the handles are approximated, whilst the third blade is drawn back by the straight bar which lies between the handles. A small screw fixes a ratchet, so that the handles—and, consequently, the blades as well—can be fixed in any position that may be necessary.

When it is brought into use the instrument is introduced into the bladder wound closed, and is subsequently opened to any extent that may be required. The handles are placed uppermost over the belly, and form, with the blade, an obtuse angle; by this means they can be more easily employed than would otherwise be the case with a fat abdomen.

—Clarke, in *Brit. Med. Jour.*

Medical News and Miscellany.

DR. ROBINSON denies the report of Mr. Bardsley's being a parietic.

EIGHT per cent. of the people of Europe were attacked by influenza.

CANNED salmon found several victims in London during the first week of July.

EGYPT is overrun with foreign physicians, who have no visible means of support.

FIVE deaths from chloroform have occurred in the Royal Infirmary at Manchester since January 1.

DR. SILVA JARDIN, of Rio de Janeiro, met with a terrible death—by falling into the crater of Vesuvius.

IN Australia green boughs of the eucalyptus are utilized in the sick-room as disinfectants, and to relieve the cough of phthisis.

AN English surgeon and anesthetizer at a hospital, committed suicide because a patient to whom he was administering chloroform died suddenly.

DR. G. FRANK LYDSTON has been elected to the chair of Genito-urinary and Venereal Diseases in the Chicago College of Physicians and Surgeons.

THE London courts have denied Mrs. Maybrick's application for the insurance on the life of her husband, for whose murder she is now serving a sentence.

CANON HARFORD, of Westminster, is so profoundly impressed with the value of music as a therapeutic agent that he advocates the formation of a band of "orchestral physicians."

DR. W. S. CHRISTOPHER has resigned the chair of Theory and Practice of Medicine in the University of Michigan to take the chair of Diseases of Children in the Chicago Polyclinic.

SEYMOUR, Indiana, has a boy who has just awaked from a continuous sleep of one hundred and nine hours. That youth's talent is wasted in the wild and woolly West. He should come to Philadelphia.

Two Spanish physicians refused to hold a post-mortem because no instruments or disinfectants were supplied by the authorities. The physicians were fined, but an appeal to the higher court resulted in their acquittal.

THE revenue from patent medicines in Great Britain was \$210,000 thirty years ago. Within a generation the government revenue from this source has increased five hundredfold, now footing up \$100,500,000 annually.

IT is not alone in Philadelphia that the sweet girl graduate in medicine is taking high rank. The London School of Medicine for Women sent up nine students for the London University M. B. degree, and all succeeded.

THERE is still room for brute strength in the struggle for existence in the effete monarchies. At a Parliamentary election in Ireland Dr. Hackett was struck by a stone that drove fragments of his spectacles into his eye, endangering its sight.

AN epidemic of typhoid fever in Valley Falls, R. I., has been traced to poor drainage and privy vaults about a certain well. Over fifty cases have resulted from this source, and yet there are persons who place a light estimate on plumbing work.

DURING the years 1887-8 over 2,000,000 persons were vaccinated in Germany, with six deaths—five from erysipelas and one from blood-poisoning. Since compulsory vaccination was enforced, in 1875, Germany has had less small-pox than any other country in Europe.

SOME joker is said to have started the story that a mineral spring near Tralee, Ireland, was possessed of miraculous curative properties, and the people are flocking in crowds to the spring. Some declare themselves cured, but, as with faith cures in general, those most in need of miraculous aid go away disappointed.

IN Corea physicians are only allowed to examine the patient in the following manner: A thread is tied around the patient's wrist, and passed out by a hole in the wall to the doctor outside, who, by inspecting the thread, is supposed to arrive at a diagnosis. Corean doctors are evidently gifted with what may be termed the "*tactus eruditus*."

DR. H. M. WHELPLEY, Professor of Microscopy in the St. Louis College of Pharmacy, and for the past five years a lecturer in the Missouri Medical College, has been elected Professor of Physiology and Histology, and Director of the Histological Laboratory of the latter institution. The doctor has also accepted the position as Secretary of the Faculty.

FOR insect stings, Terry (*Med. Progress*) recommends the application of urine, as a remedy always readily obtainable, and that gives speedy relief. The active agent is probably urea. This explains the ancient custom of treating snake-bites by cutting the snake open and applying the inner surface to the bite, as the contents of the snake's intestine consist almost entirely of urea.

NEW YORK has a patient whose patronage appears to be fatal to the life of her medical adviser. Dr. Johnson died two days after this woman came to him for treatment. Six months later, she reappeared at Dr. Pond's clinic, and two days later Dr. Pond died. The next time she appeared, Dr. Phillips took charge of her, and was found dead in his bed the next morning. Dr. Phillips was a young man, and supposed to be in perfect health.

GLASGOW has now 3 ambulance wagons, the annual cost of horsing which is over £450. During the year they answered 1,518 calls, an increase of 80 on the previous year. In the city and suburbs 29 classes had been held, with 816 enrolled pupils, of whom 615 passed the examination. In connection with the Association there are now 29 centers. Detached classes have been held in 40 towns, and since the formation of the Association 34,846 pupils have received instruction in "first aid."

CHOLERA IN THE EAST.—Cholera is reported to have again broken out at Aleppo and in the surrounding villages. The disease was not officially announced to have ceased in Northern Syria until somewhat late last year, and it is highly probable that the recurrence of the disease is due either to mild cases that have taken place in the interval, or to resuscitation of the poison with the advent of hot weather. The position which Aleppo occupies on the highway to the coast and to Asia Minor generally gives importance to the occurrence. Notwithstanding the large number of pilgrims already congregating in the Hedjaz, the sanitary state of Medina is declared to be satisfactory; but in Mecca a paludal fever is raising the general rate of mortality.

COUNT MATTEI'S CANCER CURE.—Among the many claimants to the title of cancer cure is Count Mattei, an Italian nobleman, one of whose remedies bears the captivating name of "green electricity." The bottles so labeled contain a liquid which careful analysis has shown to be nothing more than water. Nevertheless there are not wanting even medical men who maintain that although they were altogether skeptical as to its being able to produce any effect, were obliged to confess that the patients on whom it was tried, showed unmistakable signs of improvement. An English journalist, Mr. Stead, is about to have Count Mattei's remedies tested, so as to either establish or demolish their claims to a cure. Sir Morrell McKenzie, Mr. Lawson Tait, and Dr. E. W. Votter have consented to act as a committee, Mr. Stead having placed four beds at their disposal for this purpose.

—*Canada Med. Record.*

Our lips we can't help curlin'
At the medical profess :
Sure, there's Dr. Quack, of Berlin,
Always finding something fresh
To prevent mankind from croaking,
An' I to load himself with fame.
This is not a theme for joking,
But—we get there just the same.

Here's a man has struck a plan, sirs—
So the daily papers say—
To prevent the growth of cancers,
And we only hope he may ;
All the things they'll soon be healing
To which one can put a name—
Yet we're haunted by a feeling
That we'll get them just the same.

Oh, confound all foreign "masters"
With a secret to disclose !
We believe in mustard-plasters,
And put tallow on our nose.
Let the savants of Vienna
Spin their narratives so lame—
If we stick to salts and senna
We can get there just the same.

—*Hosp. Gaz.*

THE American Electro-Therapeutic Association will hold its First Annual Meeting at the Hall of the College of Physicians, corner Locust and Thirteenth streets, Philadelphia, Pa., Thursday, Friday, and Saturday, September 24, 25, and 26, 1891, under the presidency of Dr. G. Betton Massey.

Physicians interested in the discussion of electricity in medicine are invited to attend, without further notice. Horatio R. Bigelow, M.D., *Chairman Executive Council*; Wm. H. Walling, M.D., 2005 Arch street, Philadelphia, *Secretary*.

THE CANCER GRAFTING EXPERIMENTS.—An official report on the cancer grafting operations of Drs. Bergmann and Han has been issued. The report denies that the treatment was experimental. After patients were operated on for cancer, pieces of sound skin were grafted on the parts operated on, and pieces from the tainted places were sewn in the wounds caused by the removal of the sound skin. The operation was performed with the consent of the patient, and was done at a period when the profession was still ignorant whether cancer was contagious or not. The treatment resorted to proved the contagiousness of cancer, as was recorded in a paper read at the Medical Congress in 1889. The report adds that Dr. Leidig is incompetent to pronounce on the subject, and that he erred in asserting that the treatment was an experiment.

REORGANIZATION OF THE CHICAGO COLLEGE OF PHYSICIANS AND SURGEONS.—The coming collegiate year will be marked by a number of radical changes in the above institution; several gentlemen have resigned and a number of new professors have been elected. Among the new men are Dr. Bayard Holmes, Surgical Pathology; Dr. Boerne Bettman, Ophthalmology; Dr. James A. Lydston, Professor of Chemistry and Lecturer on Ophthalmology and Otology; Dr. Weller Van Hook, General Pathology; Dr. E. E. Babcock, Clinical Medicine and Diseases of the Chest; Dr. G. Frank Lydston, Surgical Diseases of the Genito-urinary Organs and Venereal Diseases.

The college already has an excellent reputation, and the elements of strength which have been added to the faculty will undoubtedly add to the usefulness and renown of the institution. The increased confidence of the alumni of the institution augurs well for its future prosperity.—*Western Med. Rep.*

THERE have been in France for forty years savings banks for old age, established under a law passed in 1850. These banks have no such objectionable feature as the one I have mentioned, and others which might be noticed; and their sole defect is that their existence is not as well known as it should be. By these banks, established as the result of a prolonged study of the matter by competent men, a workman or employé who deposits every day the price of a drink—that is, ten centimes—beginning at the age of twenty, will receive when he reaches fifty-five \$60 a year for the remainder of his life; when he reaches sixty, \$100 a year; when he arrives at sixty-five, \$172 a year; as long as he lives.

CLINICAL TEACHING IN MADRID.—The Spanish Government is about to submit to the Cortes a proposal for the creation of a Clinical Hospital in connection with the Faculty of Medicine of the Central University (Madrid). Additional facilities for clinical instruction are said to be urgently needed in the Spanish capital, and it is gratifying to know that the Government is showing symptoms of being alive to the fact, but those interested in the reform of medical education in Spain are not sanguine that the measure will be carried into effect, at any rate for a long time to come, past experience having shown that the powers that be in Spain act up to the spirit of Lord Melbourne's favorite motto—never to do to day what could by any possibility be put off till to-morrow.

PROTECTION OF WATER.—During the recent session of the Maine Legislature it passed a bill entitled, "An Act to Protect Water used for Domestic Purposes," of which the following are provisions:

SECTION 1. Whoever knowingly and wilfully poisons, defiles, or in any way corrupts the waters of any well, spring, brook, lake, pond, river, or reservoir, used for domestic purposes for man or beast, or knowingly corrupts the sources of the water supply of any water company, or of any city or town, supplying its inhabitants with water, or the tributaries of said sources of supply in such manner as to affect the purity of the water so supplied, or knowingly defiles such water in any manner, whether the same be frozen or not, or puts the carcass of any dead animal or other offensive material into said waters, or upon the ice thereof, shall be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding one year.

SECT. 2. Whoever shall wilfully injure any of the property of any water company or of any city or town used by it in supplying water to its inhabitants, shall be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding one year; and such person shall also forfeit and pay to such water company, city, or town three times the amount of actual damages sustained, to be recovered in an action of the case.

SECT. 3. The provisions of all general laws, and of all special acts inconsistent with this act, are hereby repealed.

ANOTHER NEW CURE FOR CONSUMPTION.—At a meeting of the Paris Academy of Medicine, held on Tuesday last, Dr. Lannelongue read a communication in regard to his experiments in the treatment of tuberculosis. He states that his lymph consists of a mineral substance fatal to microbes—chloride of zinc—and he applies it in doses, of various degrees of strength, according as the tuberculosis is external or pulmonary. Dr. Lannelongue calls his method the sclerogenous method—that is to say, a method

destined to render the flesh and fibers attacked capable of being cicatrized. His process, he asserts, circumscribes the action of the tuberculosis bacillus by attacking it at its extreme base, in withdrawing it from the extremity to the center of its action, and in causing its disappearance by reducing it to its base of action. He proceeds in the same fashion with the bacillus acting on the lung, and when the fibers, the tissue and flesh by the action of the bacillus have been transformed into pus, he proceeds as a surgeon and reconstitutes by his inoculations the removed portions. His process has thus results just the opposite of the lymph of Dr. Koch. Dr. Lannelongue begins with a local treatment, but in proportion as this treatment produces local effects, all the rest of the organism also experiences a progress which is manifested simultaneously with the local cure, and in fortunate cases there is a general cure. Dr. Lannelongue proceeds according to the Pasteur method, and operates on the Koch bacillus. He has applied and combined the results of these two workers, and the results so far are very promising. It will be observed that there is no mystery about Dr. Lannelongue's curative agent, as there was with Koch's lymph. We are, therefore, able to speak of his method in terms of respect.—*Hospital Gazette.*

WEEKLY Report of Interments in Philadelphia, from July 11 to July 18, 1891:

CAUSES OF DEATH.		Adults.	Minors.	CAUSES OF DEATH.		Adults.	Minors.
Abscess.....	2	4		Homicide.....	1		
Anemia.....	2			Inanition.....	2		11
Aneurism of the aorta.....	3			Inflammation bladder.....	2		
Apoplexy.....	11	1		" " brain.....	1		15
Bright's disease.....	10			" " bronchi.....	2		3
Cancer.....	6			" " kidneys.....	1		3
Casualties.....	6	2		" " larynx.....	1		
Congestion of the brain.....	2	13		" " lungs.....	6		9
" " lungs.....	1	2		" " pericardium.....	1		
Cholera infantum.....	129			" " peritoneum.....	3		
Cholera morbus.....	3			" " s. & bowels.....	5		4
Cirrhosis of the liver.....	4			" " tonsils.....	1		
Consumption of the lungs.....	36	3		Insanity.....	2		
" " bowels.....	1			Jaundice.....	1		
Convulsions.....	22			Malformation.....	1		1
" " puerperal.....	1			Mania a potu.....	1		
Croup.....	3			Marasmus.....	1		29
Cyanosis.....	4			Measles.....	2		3
Debility.....	3			Obstruction of the bowels.....	2		
Diabetes.....	1			Old age.....	6		
Diarrhoea.....	3	6		Paralysis.....	9		
Diphtheria.....	1	4		Rheumatism.....	1		
Disease of the liver.....	1			Shock.....	1		
" " heart.....	18	4		Septicemia.....	1		1
" " spine.....	1			Softening of the brain.....	1		
" " kidneys.....	1			Stricture of œsophagus.....	1		
Drowned.....	4	3		Suffocation.....	1		1
Dropsy.....	1			Suicide.....	1		
Dysentery.....	1	2		Stroke.....	1		
Epilepsy.....	1			Syphilis.....	1		1
Enlargement of the heart.....	1			Teething.....	5		
Eczema.....	1			Tetanus.....	1		3
Fever, malarial.....	2			Tumor.....	1		
" remittent.....	1			Ulceration of the bowels.....	1		
" scarlet.....	2			Uræmia.....	5		1
" typhoid.....	3	4		Whooping cough.....	2		
Fistula.....	1			Wound, gunshot.....	1		1
Gangrene.....	2						
Gaul stone.....	1			Total.....		193	306

A TALK WITH MR. BLAINE—BY OUR SPECIAL CORRESPONDENT—"AFTER" THE "TRIBUNE."—"It is a hot day!" said Mr. Blaine to me, as we sat side by side on the sand.

He was pale and robust, and spoke in a very feeble voice, but none the less loudly. Upon the assent to the idea advanced, he resumed:

"I am troubled excessively with a tangled optic nerve, also a nervous contraction of the palate and tonsil, especially at meal-time, while I fear my kidney is dragging anchor. This would not trouble me much were it not accentuated by touch of panaratic diabetes, complicated with retrospective whooping-

cough. However, by the aid of the new antiseptic germicide, microcidine—c-i—not s-i—got that? A fellow who was up here the other day distressed me deeply by spelling these things wrong, and I was astonished to find on reading his account of them that I had laid in another choice and altogether new selection of ailments."

We were silent a moment, while I made notes.

"Microcidine," I repeated, and he then proceeded.

"The symptoms—polyuria glycosuria, seemed to call for its use. But," he added briskly, "with all these things you may truthfully say that I am really better than I have been for many years."

"Do you sleep well?" I asked.

"Very—when not dreaming of fish. You might also say, by the way, that one reason I left Washington was this: It is hot there in summer."

I made note of this fact.

"In finishing your article, you might say that when I am not surrounded by an anxious staff of doctors, I am gayly toying with a tennis racket. On my pale and emaciated days, I am in touch with misery, but when buoyant in health, I naturally look out for a little fun while I am waiting—but don't put that last sentence down—on second thought."

Just here Mr. Blaine remarked that our conversation had overtaxed his nervous force, and as he must save all his energies for a seven-course dinner that night, he begged me to excuse him. The whole family said they had enjoyed my call very much—very much, indeed.—J. S., in *New York Truth*.

Army, Navy & Marine Hospital Service.

Changes in the Medical Corps of the U. S. Navy for the week ending July 18, 1891.

BOYD, ROBERT, Assistant-Surgeon. Ordered to the U. S. R. S. "Dale," Washington, D. C.

ATLEE, L. W., Passed Assistant-Surgeon. Ordered to the "Independence."

MARTIN, WM., Surgeon. Detached from duty at the Marine Rendezvous, San Francisco, Cal., and from special duty in that city, and granted leave of absence until September 15, and then to be placed on waiting orders.

CRAWFORD, M. H., Passed Assistant-Surgeon. Detached from the "Independence," and ordered to duty at the Marine Rendezvous, San Francisco, Cal., and to special duty at that city,

APPOINTMENT.

HOPE, JAMES SHIRLEY, appointed an Assistant-Surgeon in the Navy, from July 10, 1891.

TO CONTRIBUTORS AND CORRESPONDENTS.

ALL articles to be published under the head of original matter must be contributed to this journal alone, to insure their acceptance; each article must be accompanied by a note stating the conditions under which the author desires its insertion, and whether he wishes any reprints of the same.

Letters and communications, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication, however. Letters asking for information will be answered privately or through the columns of the journal, according to their nature and the wish of the writers.

The secretaries of the various medical societies will confer a favor by sending us the dates of meetings, orders of exercises, and other matters of special interest connected therewith. Notifications, news, clippings, and marked newspaper items, relating to medical matters, personal, scientific, or public, will be thankfully received and published as space allows.

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OPINION OF THE PROFESSION.

Dr. Geo. B. Hope, Surgeon Metropolitan Throat Hospital, Professor Diseases of Throat, University of Vermont, writes in an article headed "Some Clinical Features of Diphtheria, and the treatment by Peroxide of Hydrogen" (*N.Y. Medical Record*, October 13, 1889). Extract:

"... On account of their poisonous or irritant nature the active germicides have a utility limited particularly to surface or open wound applications, and their free use in reaching diphtheritic formations in the mouth or throat, particularly in children, is, unfortunately, not within the range of systematic treatment. In Peroxide of Hydrogen, however, it is confidently believed will be found, if not a specific, at least the most efficient topical agent in destroying the contagious element and limiting the spread of its formation, and at the same time a remedy which may be employed in the most thorough manner without dread of producing any vicious constitutional effect."

"In all the cases treated (at the Metropolitan Throat Hospital), a fresh, standard Marchand preparation of fifteen volumes was that on which the experience of the writer has been based."

Dr. E. R. Squibb, of Brooklyn, writes as follows in an article headed "On the Medical Uses of Hydrogen Peroxide" (*Gaillard's Medical Journal*, March, 1889, p. 267), read before the Kings County Medical Association, February 5, 1889:

"Throughout the discussion upon diphtheria very little has been said of the use of the Peroxide of Hydrogen, or hydrogen dioxide; yet it is perhaps the most powerful of all disinfectants and antiseptics, acting both chemically and mechanically upon all excretions

and secretions, so as to thoroughly change their character and reactions instantly. The few physicians who have used it in such diseases as diphtheria, scarlatina, smallpox, and upon all diseased surfaces, whether of skin or mucous membrane, have uniformly spoken well of it so far as this writer knows, and perhaps the reason why it is not more used is that it is so little known and its nature and action so little understood."

"Now, if diphtheria be at first a local disease, and be auto-infectious; that is, if it be propagated to the general organism by a contagious virus located about the tonsils, and if this virus be, as it really is, an albuminoid substance, it may and will be destroyed by this agent upon a sufficient and a sufficiently repeated contact. . . . A child's nostrils, pharynx and mouth may be flooded every two or three hours, or oftener, from a proper spray apparatus with a two volume solution without force, and with very little discomfort; and any solution which finds its way into the larynx or stomach is beneficial rather than harmful, and thus the effect of corrosive sublimate is obtained without its risks or dangers."

Further on Dr. Squibb mentions that **CHARLES MARCHAND** is one of the oldest and best makers of Peroxide of Hydrogen, and one who supplies it to all parts of the country.

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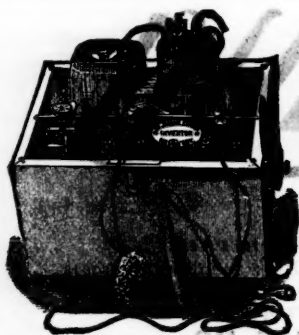
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PILLS ZINC SULPHO-CARBOLATE in Treatment of TYPHOID FEVER, INFANTILE DIARRHŒA, CHOLERA INFANTUM and Allied Diseases.

From recent investigations and experience of eminent clinicians we are led to believe that ZINC SULPHO-CARBOLATE is the ideal intestinal antiseptic for administration in TYPHOID FEVER, INFANTILE DIARRHŒA, CHOLERA INFANTUM, and all allied diseases where an efficient antiseptic combined with a mild astringent and stimulant action is indicated.

We quote from recent articles from able clinicians, published in THE TIMES AND REGISTER during the last year:

Since 1888, I have used this drug in every case of typhoid fever treated by me. These cases, excluding those in which the diagnosis was not certain, and those in which the sulpho carbolate was not employed until a late stage, number over one hundred. All of these recovered. All the doubtful cases recovered. The number and proportion of abortive cases treated by me in the same period, and not included in this list, were very large. The specific effects of the drug upon the symptoms were as follows: The fever fell from one to two degrees as soon as the stools became inodorous. This has been an invariable effect; and, as this fall brings the case out of the limits recommended by Brand as suitable for the cold bath treatment, this result alone would warrant us in the use of the sulpho-carbolate.—*William F. Waugh, M.D., in THE TIMES AND REGISTER.*

"In 1889, I treated about seventy cases of infantile diarrhœa and cholera infantum with the sulpho-carbolate of zinc, pepsin, bismuth and opium. The zinc was given in one-quarter to one grain doses every three or four hours, and with a uniform good result

in every case."—*W. G. Stewart, in THE TIMES AND REGISTER.*

"From the first dose of sulpho-carbolate of zinc, with bismuth and opium combined, in two cases of typhoid fever in the third week, the irritability of the stomach was relieved, and the stools lost their fetid odor in twenty-four hours' time. I then gave cinchonidia every four hours, and in eleven days my cases needed no more attendance. These were cases of typhoid abdominalis. Regarding the diarrhœa of children, I think it is the *rem tendere* (or the thing intended.)"—*Dr. George Grove, in THE TIMES AND REGISTER.*

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